

MISCALCULATED AMBIGUITY:
THE EFFECTS OF US NUCLEAR DECLARATORY POLICY ON
DETERRENCE AND NONPROLIFERATION

BY
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APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

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ABSTRACT

This study analyzes how the new nuclear declaratory policy, espoused in the 2010 Nuclear Posture Review, balances the goals of deterrence and nonproliferation. The author concludes that increasing complexity in the nuclear arena makes reliance on the legacy policy of “calculated ambiguity” both increasingly hazardous for deterrence and decreasingly effective as a nonproliferation tool. These detrimental outcomes demand innovation in strategic thinking and revision of nuclear declaratory policy, specifically through adoption of a sole-purpose nuclear policy. Employed in the assessment of the new policy is a multiple methodological approach using historical, theoretical and practical frameworks. This study undertakes an appraisal of historic deterrence policies and nonproliferation initiatives exposing the essential elements of each. Building off these assessments, a comparative analysis of the new policy, dubbed “Lead-but-Hedge”, and a sole-purpose policy illuminates the strengths and shortfalls of each. Finally, the author examines the strategic consequences of the new policy on the nuclear decision-making of allies (Japan), competitors (India), and rivals (Iran). The inquiry finds that in an era of salient WMD threats, it is necessary to communicate more directly the risks and consequences associated with WMD use against the US and its interests. Adoption of a sole-purpose policy by the US best accomplishes this goal while balancing the requirements of deterrence, on the one hand, and the Obama administration’s top priority of nonproliferation on the other.

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Introduction

US nuclear declaratory policy is a critical component of the National Security Strategy. Fundamentally, declaratory policy represents a theory of how the US believes it can best affect its security through the posturing of its nuclear capabilities. At its core, a well formulated and articulated nuclear policy explains why this theory is expected to work, identifies threats, and proposes remedies to address those threats. Yet, frequently overlooked in the policy generation and review process is the influence it may portend on competing national objectives. Both in theory and in practice, the sum total of national security policies should ideally work in consonance and synergistically compliment concurrent efforts to achieve the political ends of grand strategy—that collection of military, economic and political means and ends with which a state attempts to achieve security.¹

In this thesis, I seek to answer how the new nuclear declaratory policy espoused in the 2010 Nuclear Posture Review (NPR) balances the goals of deterrence and nonproliferation.² My primary contention is that US declaratory policy, particularly the newest version, is ill-suited to faithfully achieve both its deterrence and nonproliferation objectives. The main reason for this shortcoming is the legacy use of “calculated ambiguity” to signal both US intent and strategic logic regarding the legitimate use of nuclear weapons. As I will demonstrate, this legacy

¹ Posen, Barry. *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars*. (Ithaca: Cornell University Press, 1984) 7.

² The Nuclear Posture Review is a congressionally mandated review that establishes US nuclear policy, strategy, capabilities and force posture for the next five to ten years. In this primary national security document, the DOD and various interagency commissions assess nuclear policy in light of the global strategic environment and then provide a collective recommendation to senior DOD staff, the President, and Congress. The NPR then becomes the guide for the operation and budget of the nuclear weapons community.

directly influences the scope of the current declaratory policy. Driven by important change that is creating greater complexity in the nuclear arena, I argue that continued US reliance on this policy for deterrence is becoming increasingly hazardous. At the same time, this legacy policy is also becoming decreasingly effective as a nonproliferation tool. This urgent condition demands innovation in strategic thinking and revision of US nuclear declaratory policy.

In an era of more diffuse WMD threats, clearly communicating the risks associated with nuclear use against US interests is most prudent. Clear articulation of these risks is best served through adoption of a sole-purpose nuclear policy—one that posits that the *only* utility of the US nuclear arsenal is to deter the use of nuclear weapons by other states. Evidence indicates a more explicit nuclear declaration in response to crossing pre-defined thresholds provides a moderating effect on the nuclear behaviors of allies, competitors and rivals. As will be shown, this type of declaratory policy will also induce increased caution and restraint by an adversary, while simultaneously allowing the US to credibly pursue its nonproliferation efforts.

Despite significant, even dramatic, changes in US National Security Strategy and security policies in response to new concerns about weapons of mass destruction and terrorism, there has been little debate about or innovation in declaratory policy.³ This work rekindles policy discussions by illuminating the essential elements of the debate and evaluating recognized beliefs, facts and principles regarding US nuclear deterrence theory and nonproliferation norms. This thesis frames these elements through two common threads. The first thread examines the effect of US declaratory policy choices on its deterrence posture. These choices ultimately define the conceptual space within which US leadership understands the utility of nuclear weapons. The

³ Bernstein, Paul I. and John F. Reichart. *The Future Nuclear Landscape*. (Ft. Belvoir: Defense Technical Information Center, 2007) 33.

second conceptual thread examines how the chosen deterrence posture affects its concurrent non-proliferation efforts. Tensions appear to exist between these preferences with a balance sought to optimize both. The problem, of course, is that the aim of optimization leaves the overall goal short of the strategic mark.

In assessing the new declaratory policy, I employ a multiple methodological approach using historical, theoretical and practical frameworks. Chapter 2 works through a historical narrative tracing US declaratory policy generation from early nuclear deterrence deliberation to contemporary thinking. The use of this narrative illustrates several enduring principles which govern nuclear policy development. Four conceptual themes identified in this chapter categorize historical US declaratory policies: nascent deterrence, assured destruction, nuclear war fighting, and graceful decline. Identification of these themes provides a foundation for understanding the impact of historical legacy in the guiding tenants contained in the 2010 NPR while also informing the analysis found in subsequent chapters.

Emerging from this chapter are seven enduring principles that govern US nuclear logic and serve as a guide to future US policy makers. First, nuclear weapons are primarily a political instrument. Although they have narrow military utility, their most compelling function has been realized in the diplomatic realm. Second, the US nuclear arsenal exists fundamentally to deter nuclear attack against the US and its allies. Historically, US nuclear policy documents unanimously echo this sentiment, and declare, if at all possible, that the US should not initiate a nuclear war. Third, since their inception, nuclear weapons have consistently been sought as a low-cost substitute for fielded forces. The “more bang for the buck” offered by nuclear weapons seems appealing when confronted with limited resources. Fourth, as long as nuclear weapons exist, the US will never be without them. This is a necessary truth accepted as *a priori*. Fifth, nuclear war plans provide flexibility and

options to the President. Every president since Kennedy has desired increased flexibility in employment options. Sixth, survivability of retaliatory forces is required to inflict “unacceptable damage” to any adversary, even if that nation strikes first. Finally, US targeting for nuclear weapons has mainly focused on counter-force, counter-military, leadership and war supporting industry. With few exceptions, the US has avoided deliberate targeting of populations.

Chapter 3 reorients the historical narrative to explore several of the most influential nonproliferation efforts beginning with post-WWII attempts and ending with President Obama’s April 2010 Nuclear Security Summit. In sum, chapter 3 examines the Baruch Plan, Eisenhower’s Atoms for Peace Program, the Nuclear Nonproliferation Treaty (NPT), Proliferation Technology Control Regimes (PTCR), and counterproliferation efforts. By exploring each initiative, I highlight their original logic and intent while examining their individual merits, shortcomings and impacts on the current nonproliferation regime. Through examination of these regimes, we begin to tease out the conflictual relationships that exist within the framework of declaratory policy as they pertain to the concepts of nuclear deterrence and nonproliferation.

This chapter also exposes important lessons for US policy makers. Problems of verification, enforcement, and a potential for cheating have plagued nonproliferation regimes since their inception. Yet, even when they do function properly, interdiction of nuclear materials alone should not be seen as a panacea. For example, the capacity to deliver nuclear weapons by means of ballistic missiles multiplies the danger presented by a nuclear weapons state and must be closely regulated. It is clear that this regulation as well as other nonproliferation efforts work best when executed using multilateral mechanisms.

Perhaps the most important finding through the analysis of nonproliferation initiatives is that declaratory policy can act as a

powerful nonproliferation tool. Extending security assurances can mollify a nation's security dilemma, putting off many nations' desires for an organic nuclear weapons program. This is especially true if used in concert with other non-nuclear assurances. Furthermore, evidence demonstrates that nuclear weapons states acquire credibility with non-nuclear weapons states within the nonproliferation regime when they pursue negotiations in "good faith" on nuclear disarmament. A declaratory policy that is consistent with these types of negotiations can foster a positive non-proliferation environment. However, as the US continues to draw down its strategic forces, in accordance with the new START Treaty, careful consideration must be given to the credibility of its own deterrent. Consequently, US abilities to issue convincing nuclear security guarantees are predicated on a robust nuclear force, and as a result of excessive downsizing, may serve to jeopardize its non-proliferation efforts in the long-term.

Given the history of US declaratory policy as an instrument of deterrence, and more recently viewed in light as a non-proliferation tool, chapter 4 presents an assessment of the newest declaratory policy. It does so using a three step analytical process. It begins with an analysis of a notional "sole-purpose" policy one might expect to see from the US given the changing nuclear security environment and the conclusions presented in previous chapters. The efficacy of the actual policy is then analyzed by observing analogues and disconnects found in our expected policy and the policy dubbed "Lead-but-Hedge" found in the NPR. Finally, consideration is given to whether or not the NPR genuinely changes the basic global message the US sends regarding the right to use nuclear weapons.

Uncovered in this analysis is that "Lead-but-Hedge" is a chameleon, retaining calculated ambiguity at its core, but intimating a reduced salience of nuclear weapons in US grand strategy. In this limited way, the NPR advances President Obama's commitment to "seek

peace and security in a world without nuclear weapons”. However, from a purely strategic perspective, the new declaratory policy changes little from previous statements and the long nuclear history of the US. In short, considering the change in environments and the dual-goals of deterrence and non-proliferation, the new policy falls similarly short in its ability to serve both purposes.

In an era of salient WMD threats, it would appear necessary to communicate more directly the risks and consequences associated with WMD use against US interests. A sole-purpose policy adopted by the US would seem best to balance the requirements of deterrence, on the one hand, and the administration’s top priority of nonproliferation on the other. However, three vexing issues—BW attacks, nuclear weapon state transfers of WMD to transnational terrorists, and allies’ apprehension to adopt a more explicit policy—continue to confound US policy makers in creating a consistent and credible nuclear strategy. Yet, leaving calculated ambiguity as the centerpiece of US declaratory policy has significant implications. Such a policy can be particularly risky in a proliferating world. It may cause dangerous misinterpretation of US intentions leading to actions that contradict US preferences, to include, incentives for nations to pursue a nuclear weapons capability.

Building off these assessments, Chapter 5 explores the declaratory policy in the context of practical, real-world impacts. Considered in this chapter, are the effects and strategic consequences of “Lead-but-Hedge” on the nuclear decision making processes of allies, competitors and rivals. Using three case applications (Japan as an ally, India as a competitor, and Iran as a rival), we make some simple yet pertinent generalizations about larger implications of the “Lead-but-Hedge” approach to US nuclear policy. Cases describe the sequence of events informing each nation’s unique nuclear logic trail, defining the relevant factors and proximate strategic issue driving each nation’s nuclear decision-making process. This is followed with an examination of the

effects of “Lead-but-Hedge” on each nation’s nuclear calculations as well as its propensity to drive horizontal or vertical proliferation behaviors. These impacts are evaluated for their moderating or damaging influences on US deterrence and nonproliferation objectives with results extrapolated to like allies, competitors and rivals.

In respect to allies covered under the US extended deterrent, evidence indicates that as long as US nuclear commitments remain firm, nations benefiting from US extended deterrence guarantees are unlikely to seek internal balancing through nuclear weapons programs. However, an unmistakable lesson from this work is that US declaratory policy changes have the potential to cause great anxiety amongst those covered by current US guarantees. In the interests of nonproliferation, it behooves the US to proactively ease such anxieties before they begin to manifest. Close consultation with affected allies is imperative to meet this aim to ensure critical elements of their respective security dilemmas are captured and addressed by policy innovations. Finally, as the US reduces the salience of nuclear weapons to deter attacks on its allies, softened nuclear guarantees must be replaced with the perception of enhanced, robust, and durable conventional ones. These commitments must be augmented with forward-deployed offensive and defensive capabilities to fill any perceived psychological gap left by waning nuclear pledges.

Competitors seem to have paid significantly less attention to “Lead-but-Hedge”. Evidence suggests competitors aspiring to possess or possessing nuclear weapons will continue to develop their nuclear logic based primarily on the context of both the regional and strategic security environment and not the nuclear declarations of the US. It is unlikely these nations will simply emulate US strategic behavior in the absence of real reductions in the threats driving their respective security dilemmas. Moreover, reductions in the security dilemma alone may not be sufficient to halt a competitor’s nuclear aspirations. Ultimately, competitors may

have other motivations—including regional ambitions and prestige requirements—to acquire nuclear weapons.⁴

There is little evidence to suggest that changes in US nuclear declaratory policy, especially subtle changes, exert a significant influence on the nuclear decisions of competitors. As the US asserts a de-emphasized role for nuclear weapons in its strategic posture, competitors take note of the striking similarities between the previous policies and “Lead-but Hedge”. Thus, competitors will likely be unmoved by the new policy. Finally, despite NPR assurances, the US continues to send mixed signals regarding the actual salience of nuclear weapons in its strategic calculus. For competitors eagerly watching for “say-do” gaps, the US reinvigoration of their nuclear enterprise is unsettling to those perceptive to US changes in military doctrines and capabilities. Until the US and Russia can reduce their vast arsenals to levels approaching those of their nearest distant competitors, “Lead-but-Hedge” promises to have little effect on their respective nuclear decisions.

As one would expect, rivals are hypersensitive to innovations in US nuclear declaratory policy. It is very likely that the aggressive foreign policy imparted by “Lead-but-Hedge” will calcify the pursuit or maintenance of nuclear capabilities by states targeted by the new US policy. It seems clear that the presence of a threatening hegemonic power rivalry poses sufficient intimidation that a weaker state may be willing to endure great domestic and international costs to ensure its security. Thus, in a protracted rivalry setting, especially where one rival is particularly vulnerable due to vast asymmetries, nuclear deterrence becomes a very attractive strategy. Cognizant of this fact, the US must be fully prepared for the realities of nuclear armed rivals. By proactively arming itself with a suite of tailored deterrence strategies, the US can minimize horizontal proliferation effects caused by the “break-out” of a

⁴ Soloksky, Richard. “Demystifying the Nuclear Posture Review.” *Survival* 44, no. 3 (2002): 136.

defiant state. This may require the US to consider explicitly extending its security umbrella to “select” nations to abate new and powerful regional security dilemmas. These assurances should be augmented with credible obligations in Ballistic Missile Defense (BMD), consequence management, and other counter-weapons of mass destruction capabilities. By offering states a way to mitigate or impede an attack without needing to resort to horizontal proliferation, the US will forward both its deterrence and nonproliferation objectives.

Although the addition of new nuclear rivals adds complexity and uncertainty to a rapidly changing nuclear landscape, it represents a playing field in which the US was once abundantly skilled. As the oldest practitioner of nuclear deterrence, the US possesses a wealth of dormant experience awaiting renewal. In order to resuscitate this competence, one must first return to the golden age of nuclear deterrence and listen carefully to its muted lessons. By carefully studying the evolutionary path of US nuclear policy, insights may be gleaned on how to best maintain deterrence in a world that must also focus on non-proliferation. Comprehension of these evolutionary factors, within their appropriate context, allows for informed construction of current policy efforts and provides a conceptual framework for future direction. It is these tasks which occupies the interest of the next chapter.

Chapter 1

Evolution and Devolution of US Nuclear Policy

The debate surrounding the current US nuclear declaratory policy spans the spectrum of nuclear deterrence thought and continues to evolve with transforming global conditions. Changes in perceived threats, the meaning and value of deterrence, technological advances, targeting concepts, and non-proliferation efforts have impacted former policies and remain powerful determinants in shaping the current debate. The aim of this chapter is twofold. The first is to create an historical narrative tracing the declaratory policy process from early nuclear deterrence thought to contemporary thinking. The second is to use this narrative to illuminate enduring principles which govern nuclear policy development. In doing so, I explore notions regarding nuclear weapons employment and identify four conceptual themes that categorize US declaratory policy, from Truman's nuclear monopoly to George W. Bush' tailored deterrence: nascent deterrence, assured destruction, nuclear war fighting, and graceful decline. The identification of these themes serves two purposes: First, it provides a prelude to understanding the guiding principles contained in the 2010 NPR. Second, it informs the analysis regarding the controversy over the effect of declaratory policies on current US nuclear deterrence and non-proliferation ambitions.

The Concept of Deterrence

Before beginning any serious inquiry into the history of US nuclear declaratory policy, it is instructive to revisit briefly the concept of deterrence and a special subset labeled nuclear deterrence. Deterrence is a deceptively complex concept; however, Colin Gray's reduction to its quintessence is informative. Gray described it as "an indirect influence

over the behavior of others.”¹ At its core, deterrence is a communication process of issuing threats to cause another to decide against an unwanted behavior. For a potential attacker, deterrence involves a process of calculating the benefits of a contemplated action against assessed risks or losses. The central component of this calculation is the credibility of the defender’s issued threat. Credibility is defined as the attacker’s computation of the defender’s *capability and intent* to carry out the issued threat, and whether the deterrent measure *can be challenged*.² Capabilities are the defender’s tools to punish the attacker or deny any gains from said aggression. Intent is the demonstration and perception of the defender’s mettle.³ The attacker must believe the defender is willing to pay the physical, political, and economic price of combat or other deterrent acts. Declarations and actions signal the defender’s intent. Any perceived uncertainty by the attacker in the intent of the defender opens the defender to potential deterrent challenges. Finally, the ability for the attacker to challenge the deterrent measure itself has a direct influence on its credibility. Ideally, a deterrent measure should be certain, severe, and immediate.⁴ In the absence of these qualities, the declared deterrent policy loses credibility and invites potential adversaries to test it.

Deterrence works when fear of consequences causes an adversary to yield. This might sound straightforward, but an effective deterrence strategy is actually quite complicated. It requires an attentive audience, the expression of threat, mutual recognition, communication, understanding, and purposeful decision making by the target audience. Deterrence is based on a rational calculation of expected risks, costs,

¹ Spencer Colin Gray. *Explorations in Strategy*. (Westport (Conn.): Praeger, 1998), 31.

² Thomas C. Schelling. *Arms and influence*. (New Haven: Yale University Press, 1966) 36-39.

³ Herr, Eric. *Operational Vigilant Warrior: Conventional Deterrence Theory, Doctrine, and Practice*. (Ft. Belvoir: Defense Technical Information Center), 1996.

⁴ William Goodman. "Cyber Deterrence: Tougher in Theory than in Practice?" *Strategic Studies Quarterly*, Fall 2010, 107.

and benefits, and ultimately a decision to yield. The success of a deterrence strategy can break down at any point in this process. However, despite its inherent complexity, deterrence remains an appealing option for strategists. As a rule, war is generally more costly than the resources expended to deter it. This is because, in the broad spectrum of human interaction, deterrence is usually the most efficient route to controlling another's behavior, since the deterred is ultimately persuaded to exercise self-control.⁵

Nuclear Deterrence

The awesome destructive capabilities enabled by harnessing the atom gave birth to a special brand of deterrence called nuclear deterrence. Since the destruction of Hiroshima and Nagasaki, a major part of the credible response capability of the US deterrent has included nuclear weapons. The atomic and thermonuclear bomb, coupled with Strategic Bombers, Intercontinental Ballistic Missiles (ICBMs), and Sea Launched Ballistic Missiles (SLBMs), guaranteed that an entire nation could be crippled—far beyond the historical experience of modern societies—without its own military capabilities being able to prevent it.⁶ This reality has underpinned the modern security dilemma. State survival can only be secured through the credible threat of an equal reprisal that assures the destruction of an attacker. However, even this prospect cannot be guaranteed, since absorbing an aggressor's first blow could prevent such a reprisal.

Nuclear deterrence possesses other unique qualities as well. It uses a kind of threat which must be absolutely effective; the threat of societal destruction. This expressed threat is a single-use option that cannot ever fail to be effective. Just one failure of nuclear deterrence would be fatally too many. Bernard Brodie, the initial architect of US

⁵ Keith B. Payne. *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century*. (Jessup, MD: National Institute Press, 2008), 18.

⁶ Alexander L. George, and Richard Smoke. *Deterrence in American Foreign Policy: Theory and Practice*. (New York: Columbia University Press, 1974), 21.

nuclear strategy fittingly stated, “Nuclear deterrence now means something as a strategic policy only when we are fairly confident that the retaliatory instrument upon which it relies will not be called upon to function at all.”⁷ Yet despite this desire for its non-use, a nation’s nuclear arsenal is maintained at high readiness levels and often improved. This is done at extraordinary cost to a nation that wields such weapons. Thus, the nuclear weapon has prompted nations to rethink the military’s traditional function of fighting and winning wars. In the nuclear age, the central purpose of militaries is to avert war.⁸ This new focus on averting war directly supported strategies of deterrence.

From its inception, there has been a great deal of debate about nuclear deterrence. Different nuclear policies have evolved based on different viewpoints. This has resulted in various declaratory policies promulgated by US Presidential Administrations. However, despite changes of administrations, technology, targeting concepts and bureaucratic momentum, the debate over basic nuclear deterrence concepts has remained relatively stable. Using four conceptual themes—nascent deterrence, assured destruction, nuclear war fighting, and graceful decline—one finds that the nuclear deterrence issues of the past continuously re-appear. These same topics shape the current debate and promise to inform future ones.

Nuclear Monopoly—Truman and Nascent Deterrence

The US emerged from WWII with an unprecedented ability to destroy enemy targets with new fission weapons, but adopted no coherent policy to employ them.⁹ It also emerged with a new threat. The

⁷ Bernard Brodie. *Strategy in the Missile Age*. (Santa Monica, CA, Rand Corp, 2007), 272.

⁸ Bernard Brodie, Frederick Sherwood Dunn, Arnold Wolfers, Percy Ellwood Corbett, and William T. R. Fox. *The Absolute Weapon: Atomic Power and World Order*. (New York: Harcourt, Brace and Co., 1946), 76.

⁹ Lawrence Freedman. *The Evolution of Nuclear Strategy*. (New York: St. Martin's Press, 1981), 16.

Soviet Union, its former ally against the Axis powers, began to threaten West European nations. Soviet-western tensions would spark off the Cold War, and provide the context for nascent US nuclear deterrence policy.

The earliest plans for nuclear weapons were an extension of conventional strategic bombing methods employed at the end of the war. The military saw supplies of the bomb as limited, and envisioned their use as a weapon to blunt advancing Soviet forces. Such thoughts limited military thinking on nuclear weapons employment. Not until war plan HALFMOON was approved by the Joint Chiefs of Staff on 19 May 1948 did the Joint Chiefs envision an air offensive designed to exploit the bomb.¹⁰ Even then, the bomb's use remained an extension of the Army Air Corps' pre-World War II Industrial Web Theory.¹¹

President Harry S. Truman saw beyond these parameters, and grappled with the issue of nuclear policy within his administration. Truman felt that the destructive and psychological power of atomic weapons made their use a delicate political issue. Nevertheless, he knew that within the context of the Communist coup in Czechoslovakia, the Berlin Blockade, and the fall of China, the military establishment would press him for guidance regarding the use of atomic weapons.¹² When

¹⁰ HALFMOON was the US war plan for engaging the Soviet Union and approved by the JCS on May 19, 1948. It was part of a general concept for resisting Soviet aggression that called for an air offensive mostly consisting of conventional capabilities. However, it also envisioned as part of the strategic air response to be the use of atomic weapons. Although President Truman intimated that authorization for such usage was not assured, atomic weapons would be used against "vital elements of the Soviet war-making capacity".

¹¹ For an insightful analysis of the Industrial Web Theory see Tami Davis Bittle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas About Strategic Bombing, 1914-1945*. (Princeton, N.J.: Princeton University Press, 2002), pp. 163-164. This American legacy WWII bombing strategy focused on teasing out the main threads in the complex web of industrial economies. They believed these linkages could be identified and assessed well in advance of hostilities providing an almost fool-proof strategy for rapid victory. Once identified, precise application of offensive air power utilizing the best and most ingenious American technologies would unravel an adversary's war making capacity.

¹² Campbell Craig. *Destroying the Village: Eisenhower and Thermonuclear War*. (New York: Columbia University Press, 1998), 21.

presented with HALFMOON, he initially considered rejecting the war plan before finally accepting it. He would have preferred that conventional weapons do the damage, but, in light of the post-WWII demobilization, Truman would not support a budget sufficient to pay for the required conventional forces.¹³ However, with such divergent views between the military and administration, a clear policy was needed to govern the employment and release authority of nuclear weapons. This spawned the first US national policy guidance for nuclear weapons, in the form of National Security Council Memorandum 30 (NSC-30), *United States Policy on Atomic Warfare*. NSC-30 stated that the US must be ready to, “utilize promptly and effectively all appropriate means available including atomic weapons, in the interest of national security and must therefore plan accordingly”. It also stated, “The decision as to the employment of atomic weapons in the event of war is to be made by the Chief Executive.”¹⁴ With the advent of NSC-30, a strategy of nuclear deterrence began to take its initial form.

Defining the shape of strategic nuclear deterrence gained additional momentum when the first Soviet atomic test occurred on August 29, 1949, almost four years ahead of expectations.¹⁵ The end to the US atomic monopoly sent shockwaves through the US National Security Community, generating three significant outcomes in nuclear policy. The first was a new war plan called OFFTACKLE approved by the JCS on December 8, 1949. OFFTACKLE was the first nuclear war plan to reflect concrete political guidance in the nuclear age.¹⁶ The OFFTACKLE’s authors derived guidance from NSC-20/4, *Objectives with Respect to the USSR to Counter Soviet Threats to U.S. Security*, and

¹³ David Holloway. *Stalin and the Bomb: The Soviet Union and Atomic Energy, 1939-1956*. (New Haven: Yale University Press, 1994), 228.

¹⁴ National Security Council Memorandum 30. United States Policy on Atomic Warfare, 16 September 1948.

¹⁵ George, *Deterrence in American Foreign Policy: Theory and Practice*, 26.

¹⁶ Kunsman, *A Primer on U.S. Strategic Nuclear Policy*, 26.

specified that the US would, if at all possible, not initiate war, but could use nuclear strikes to retard a Soviet advance in Europe. This guidance was instrumental and helped to set defined political objectives for military planners. OFFTACKLE was also critical in setting the important precedent of denying the military control over atomic weapons. By requiring presidential authority for their release, absolute civilian authority over how and when they would be used in future wars was codified.¹⁷

The second important outcome of the Soviet test was the ensuing debate regarding the building of the hydrogen bomb. Now that the Soviets had the bomb and a means of delivery, an atomic strike on the US was a looming possibility. Therefore, the US would require greatly increased strategic capabilities to deter such an attack. None refuted the decision to expand production of all types of fission weapons.¹⁸ However, the question to test and produce the hydrogen bomb (a fusion weapon) set off a sharp debate within the national security community. Arguments against the hydrogen bomb were both moral and strategic. The moral argument stemmed from the limitless explosive power of the hydrogen bomb, and fueled fears that it could be used as a weapon of genocide. The strategic argument originated from the idea that the cost of building the hydrogen bomb would detract from current efforts to build fission weapons. In the end, these arguments failed to convince Truman and the political leadership.¹⁹ In the aftermath of the Berlin airlift, fall of China and the Soviet bomb, optimism regarding prospects for negotiations on almost any issue with the Soviets seemed futile. The Soviet atom bomb had introduced fears of an arms race in ways never

¹⁷ John Lewis Gaddis. *The Cold War: A New History*. (New York: Penguin Press, 2005), 55.

¹⁸ Freedman, *The Evolution of Nuclear Strategy*, 61.

¹⁹ Richard Smoke. *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War*. (3rd Ed. New York: McGraw-Hill, 1993), 55.

before felt. It was now imperative to stay ahead, and with this realization, Truman authorized the development of the hydrogen bomb.

The final significant outcome of the explosion of the Soviet bomb on US nuclear policy was that it pressed Truman to embrace a grittier foreign policy. NSC-68, *United States Objectives and Programs for National Security*, presented four alternatives: “Continuation of current policies; Isolation; War; or a rapid building up of the political, economic, and military strength of the free world.”²⁰ Paul Nitze, head of the State Department’s Policy Planning Staff and author of NSC-68, dismissed the first three options as impractical. The fourth, he determined, was the “only remaining option” to mitigate “the gravest threat to the security of the United States...from the hostile designs and formidable power of the USSR.”²¹ With NSC-68, Nitze presented Truman with a decision: rearmament or retrenchment. Retrenchment offered no solace or quarter for the growing Soviet atomic threat, leaving rearmament as the only feasible course of action. While the conventional build-up ensued, the US would have no choice but to rely on its nuclear arsenal and pursue a clear superiority in nuclear capabilities.²² The imbalance in conventional capabilities meant that the US could no longer state its intention to use nuclear weapons only as a last resort. NSC-68 rejected a policy of no first-use of nuclear weapons, and began the US longstanding declaratory policy of calculated ambiguity.²³ As Truman left office on 19 January 1953, deterrence had matured from infancy to adolescence—just in time

²⁰ National Security Council Memorandum 68. *United States Objectives and Programs for National Security*, April 14, 1950.

²¹ National Security Council Memorandum 68. *United States Objectives and Programs for National Security*, April 14, 1950.

²² Freedman, *The Evolution of Nuclear Strategy*, 67.

²³ A policy of calculated ambiguity is the practice by a country of being intentionally ambiguous on certain aspects of its foreign policy or whether it possesses certain weapons of mass destruction. This policy is useful if the country has contrary foreign and domestic policy goals or if it wants to take advantage of risk aversion to abet a deterrence strategy. Such a policy can be very risky as it may cause misinterpretation of a nation's intentions, leading to actions that contradict that nation's preferences.

for the development of the Soviet Union's hydrogen bombs, long-range bombers, and missiles.

Assured Destruction—Suicide or Surrender

Best describing the second conceptual theme found among nuclear policies is that of assured destruction (AD). Although details and emphases on certain elements changed from the three administrations that utilized AD (Eisenhower, Kennedy, and Johnson), the AD deterrence approach can be characterized by three fundamental qualities. First, AD proponents postulated that nuclear war was best prevented by guaranteeing the most cataclysmic outcome for both attacker and defender. This ensured that there could be no winners in a nuclear war which, in-turn, removed incentives for brinksmanship. Second, deployment of potent and robust weapons was essential to threaten an enemy state in order to deter its use of similar weapons. This required a sufficient number of invulnerable weapons and associated delivery platforms that enable a defender to retaliate and exact unacceptable costs on an attacker even after receiving the hardest blow the attacker could deliver. Third, neither side, once armed, had any incentive to disarm; thus, AD created a "stable balance of terror."²⁴ Nuclear stalemate remained a viable position as long as qualitative and quantitative advances in technology, doctrine, or fielded weapon systems did not upset the balance.²⁵ However, maintaining this balance in the seemingly perpetual technological revolution of the post-WWII era would prove difficult.

²⁴ Keith B Payne. *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century*. (Jessup, MD: National Institute Press, 2008), 61.

²⁵ Payne, *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century*, 221.

Eisenhower and Massive Retaliation

When Dwight D. Eisenhower was inaugurated in 1953, he embraced Truman's foreign policy codified in NSC-68, but not the costs associated with it. Eisenhower rightly saw the competition between the US and the Soviets as a prolonged struggle that would last for decades. This required a more economical approach than the massive nuclear and conventional build-up offered in NSC-68.²⁶ His attempt to balance "security with solvency", called the New Look, stressed technology over the build-up of conventional forces. Under this program, Eisenhower accelerated the use of nuclear weapons as a low-cost substitution for an exorbitantly expensive standing army.²⁷ This new policy guidance for the Pentagon would enable the atomic stockpile to grow significantly during the Eisenhower administration. Meanwhile, the Soviets seemed to be lagging behind in both number of bombs and aircraft delivery systems.²⁸ These perceived advantages would embolden Eisenhower's hard-lined nuclear declaratory policy of Massive Retaliation.

Eisenhower's nuclear policy was direct and clear. First articulated in Secretary of State John Foster Dulles' speech of January 1954, he warned the US would "retaliate massively against Soviet aggression" even if the aggression were solely conventional.²⁹ Eisenhower's logic was astoundingly simple: any war with the Soviet Union would lead to all-out war that would destroy both the US and the Soviet Union. Consequently, the strategic goal for the US was to avoid *any* militarized conflict with the Soviet Union.³⁰ Tenants of the Eisenhower's New Look Program and Massive Retaliation policy were fused together taking form in NSC-

²⁶ Smoke, *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War*, 66.

²⁷ Brauer, Jurgen, and Hubert van Tuyl. *Castles, Battles, and Bombs: How Economics Explains Military History*. (Reprint, Chicago: University Of Chicago Press) 2009.

²⁸ Smoke, *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War*, 66.

²⁹ *U.S. Strategic Nuclear Policy (An Oral History)*. DVD. Livermore, CA: Sandia National Laboratories, 2005.

³⁰ Craig, *Destroying the Village: Eisenhower and Thermonuclear War*, 69.

162/2. This policy document stated that the US needed to maintain, “A strong military posture, with emphasis on the capability of inflicting massive retaliatory damage by offensive striking power”, and that the US “will consider nuclear weapons as available for use as other munitions.”³¹ The issuance of NSC-162/2 was a seminal document in the history of nuclear policy. The language contained within NSC-162/2, as well as subsequent NSC deliberations, marked a fundamental change in US posture and strategic thinking. In the few years since the end of WWII, the security of the nation had come to rely on nuclear weapons not only for general war, but for limited war, deterrence, retaliation, and ultimately for national survival.

However, the vast nuclear striking power the US had amassed could still be compromised by a first strike. This could significantly limit the ability to parry a first blow while still being able extract an unacceptable price on the Soviets. Technological innovations in rocketry fueled this concern and threatened to tip the delicate balance of terror.³² These anxieties were realized on October 4, 1957 when Sputnik was launched using a Soviet ICBM. Sputnik introduced a deep sense of US vulnerability. Deterrence could now fail due to an inability for the US to mount a retaliatory second strike in response to a Soviet first strike on US counterforce targets.³³ The technological Pearl Harbor sparked by Sputnik’s launch produced a national effort to close the “missile gap” and shore up other perceived vulnerabilities. These efforts included making Strategic Air Command bases less vulnerable, accelerating research and development on IRBMs and ICBMs, increasing intelligence

³¹ National Security Council Memorandum 162/2. Basic National Security Policy, October 30, 1953.

³² Freedman, *The Evolution of Nuclear Strategy*, 129.

³³ A first strike is one that was not only the opening volley of a nuclear war, but was also directed against the nuclear capability of the enemy with the intention of crippling his means of retaliation. A second strike was one capable of ensuring effective retaliation even after absorbing an enemy first strike. Whereas a first strike involved counter-force, a second strike need be no more than counter-value.

gathering on the Soviet Union, and innovating new joint targeting procedures.³⁴ Ultimately, Soviet technological surprise issued its first real test to the policy of Massive Retaliation exposing its vulnerabilities to US nuclear strategists. This led Eisenhower's successor to explore new nuclear policies that would engender more flexibility and adaptability.

Kennedy/Johnson—Flexible Response, Counterforce, and Return to Assured Destruction

When President John F. Kennedy took office, the issue of the “missile gap” had permeated the imaginations of the electorate and was a key platform in his 1960 presidential campaign. However, Soviet ICBM capability had been badly overestimated with the real gap squarely in favor of the US.³⁵ This allowed Kennedy to focus his efforts on nuclear policy. The logic of Massive Retaliation—specifically, the only available response to any Soviet aggression being an all-out nuclear attack—was repugnant to the incoming administration. Heading the charge to remedy this lack of flexibility was US Secretary of Defense Robert S. McNamara. McNamara did not believe that a single, credible, deterrent strategy existed for every potential crisis. The President's hand should not be forced by a lack of alternatives; hence, he required response options that included both nuclear and/or conventional choices.³⁶ To Kennedy and McNamara, massive retaliation to any form of aggression simply lacked credibility. Dynamic situations demanded a more nuanced *Flexible Response* to deter Soviet aggression and signal both the United States' capability and intent.

The new Flexible Response policy manifested itself in the building of the new nuclear war plan (Single Integrated Operation Plan (SIOP)-63). Eisenhower's legacy plan, SIOP-62, was a “blunt instrument” containing one spasmodic option designed for execution in its existing form,

³⁴ Kunsman, *A Primer on U.S. Strategic Nuclear Policy*, 39.

³⁵ Walter A McDougall. *The Heavens and the Earth: A Political History of the Space Age*. (New York: Basic Books, 1985), 251.

³⁶ George, *Deterrence in American Foreign Policy: Theory and Practice*, 31.

regardless of circumstances.³⁷ Additionally, SIOP-62, although largely concerned with military and industrial targets, exposed the civilian population to significant collateral damage. SIOP-63 would endeavor to give Kennedy the flexibility and discrimination he required to realize his notions of a credible deterrent.

SIOP-63 delivered to the President five options, plus various sub-options.³⁸ One of the most interesting aspects of SIOP-63 was that Soviet strategic forces were separated from Soviet cities on US target lists representing a significant doctrinal shift. This became known as McNamara's "City Avoidance" policy. Additionally, the new SIOP held back strategic reserves in the event of execution, which allowed for the possible re-establishment of deterrence and avoidance of Soviet coercion after a limited nuclear exchange. Finally, SIOP-63 directed preservation of Soviet command and control, at least in the initial stages of any nuclear exchange. This doctrinal innovation allowed the Soviets to terminate the conflict at the lowest levels possible, after the cessation of hostilities. The most striking difference of SIOP-63 was its overwhelming counterforce character. In previous nuclear war plans, the majority of objectives held at risk centered on industrial and military capabilities designed to eliminate the Soviets as a major power for many years.³⁹ Counter-force targeting represented a major shift in nuclear strategy and threatened to remove any second strike capability by the Soviets. Enabling this counter-force strategy rested was two important strategic developments. First was the development of photographic reconnaissance satellites giving the US complete coverage of the USSR and a new ability to find and fix potential counter-force targets. The second, an outgrowth of the first, was the acknowledged attainment of a

³⁷ Kunsman, *A Primer on U.S. Strategic Nuclear Policy*, 45.

³⁸ Desmond Ball. *Strategic Nuclear Targeting (Cornell Studies in Security Affairs)*. (Ithaca: Cornell University Press, 1988), 63.

³⁹ Counter-force refers to strikes on nuclear forces. Counter-military refer to strikes on operational assets. Counter-industry refers to strikes on war making and war recovery potential.

clear and overwhelming US superiority in strategic systems to which these satellites certified.⁴⁰

However, McNamara soon began to back away from his counter-force/no-cities policy, for it proved extremely destabilizing. Three primary reasons drove this re-evaluation. First, by targeting the Soviets' inferior and vulnerable nuclear forces, the US placed them in a position where powerful incentives existed to adopt a "use it or lose it" doctrine. Heightened in times of crisis, this type of thinking becomes particularly dangerous, especially, in the context of such events as the Cuban missile and Berlin crises. Ultimately, this destabilizing policy displayed more brinksmanship than President Kennedy wished to exhibit. Additionally, as the Soviets continued to add more missiles, harden their systems and disperse their forces, counter-force targeting would become unfeasible.⁴¹ In such an environment, the number and accuracy of weapons required would need to be greatly increased. Finally, McNamara backpedaled from counter-force for powerful bureaucratic reasons. The services, particularly the United States Air Force, were using the counter-force policy as a basis for advocating increased budgets. McNamara came to the realization that his policy presented no logical limit to the size of the arsenal—that as long as targets of potential military value could be found, or as long as the Soviets added more weapons to their own arsenal, someone could always claim we did not have enough warheads.⁴²

Given the systemic flaws of a counter-force policy, US nuclear policy pivoted once again, this time coming full circle and returning to an assured destruction policy. The requirement was now that after a surprise Soviet counter-force strike, the US should still have enough forces surviving to destroy the USSR's governmental and military

⁴⁰ Ball, *Strategic Nuclear Targeting*, 65.

⁴¹ Ball, *Strategic Nuclear Targeting*, 67.

⁴² Kunsman, *A Primer on U.S. Strategic Nuclear Policy*, 45.

controls as well as a large percentage of its population and industrial base. McNamara's FY 1968 budget statement, presented to Congress on 23 January 1967, stated, "Such a level of destruction should serve as an effective deterrent."⁴³

Nuclear policy during the administrations of Presidents John F. Kennedy and Lyndon B. Johnson offer the richest discussions of policy evolution and devolution. This is because they were fire-tested through crisis, and eclipsed both warfighting and assured destruction doctrines. With a rediscovery of assured destruction, nuclear policy stagnated during the latter half of the Johnson administration due to the domination of events in Vietnam. However, upcoming research looking at new technologies such as multiple independent re-entry vehicles (MIRVs) and anti-ballistic missile (ABM) technology began to re-invigorate thinking regarding nuclear warfighting explored under McNamara's counter-force policy.

The Nuclear Warfighting approach—A Theory of Victory

The third conceptual theme centered on a nuclear warfighting approach. This approach appealed too many, and spanned five administrations (Nixon, Ford, Carter, Regan and George W. Bush). Three fundamental qualities characterize the warfighting approach. First, if deterrence were to fail, the US should be prepared to execute conventional and/or nuclear attacks depending on the situation. In light of this, the US should possess the ability to absorb a counter attack and the means to limit any serious damage. Second, the logic of controlled nuclear war prevailed. That is, the US needed to be able to hit selected targets quickly, precisely, and discriminately, to ensure that the US

⁴³ Statement of Secretary of Defense Robert S. McNamara before a Joint Session of the Senate Armed Services Committee and the Senate Subcommittee on Department of Defense Appropriations in the Fiscal Year 1968-72 Defense Program and 1966 Defense Budget, 23 January 1967, 39.

could gain and maintain escalation dominance.⁴⁴ Finally, the US should possess the means to force an adversary to seek the earliest termination of hostilities on terms favorable to the US and its allies.

Nixon/Ford—Sufficiency and the Schlesinger Doctrine

In 1969, when Richard M. Nixon assumed the Presidency, McNamara's assured destruction policy was seized upon by a new acronym, "MAD" (Mutually Assured Destruction). Many nuclear strategists disagreed with the tenants of MAD, particularly in its treatment of population defense in the event of a nuclear exchange. One of them was Henry Kissinger, who would become the first National Security Advisor in the new administration and, then, Secretary of State. Kissinger opined that eschewing damage limitation and discriminate targeting, which occurred under McNamara's watch, made MAD better suited to academics rather than to a national leader faced with a constituency.⁴⁵ Another skeptic was RAND's James Schlesinger, who eventually held the positions of Secretary of Energy and Defense and Director of Central Intelligence. A determined Schlesinger pushed for a renewal of the concepts of flexibility and counterforce while serving in the Nixon and Ford administrations. He also popularized a concept known as sufficiency.⁴⁶ The merger of these concepts would become known as the Schlesinger Doctrine and expressed in National Security Directive Memorandum (NSDM)-242.

⁴⁴ Herman Kahn, a nuclear strategist who worked at RAND and the Hudson Institute, originated thinking on the concept of escalation dominance in, *On Thermonuclear War*. 2nd Ed. Princeton, N.J.: Princeton Univ. Press, 1971. Kahn thought nuclear warfare could be controlled by the political authority right up to the apocalyptic "spasm war" climax. Kahn's concept centered on the frame of "escalation dominance." He conceptualized a ladder with various "rungs" of both nuclear and non-nuclear escalation. Kahn posits that a power using escalation dominance "[dominates] at any particular level of escalation and [puts] the onus on the other side to move to a higher or more dangerous level."

⁴⁵ Henry Kissinger. "The Next President's First Obligation." *The Washington Post*, (Washington D.C.), February 9, 2000.

⁴⁶ Smoke, *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War*, 195.

Based on the principle of sufficiency, the policies contained in NSDM-242 stated, “In its broader political sense, sufficiency means the maintenance of [nuclear] forces adequate to prevent the US and its allies from being coerced.”⁴⁷ To meet this intent, the Schlesinger Doctrine outlined a broad selection of counter-force and counter-industry options against a wide variety of potential enemy actions. It instructed that limited nuclear options (some down to only a few weapons) be planned which could be distinguished through both size and scope by Soviet leadership. The intent of such a policy was to leave an opening for a negotiated settlement following a recognizably limited nuclear exchange, in order to avoid unwarranted escalation.⁴⁸ Finally, NSDM-242 instructed that emphasis be placed on suppression of the economic recovery of the Soviets. The metric introduced by this policy dictated that, in an all-out strike, destruction of seventy percent of the industry needed for economic recovery must be achieved. With this level of destruction, the US would ensure a lasting victory through a Soviet inability to reconstitute its war-making capacity.⁴⁹

Carter—Countervailing

When James “Jimmy” E. Carter took over the presidency in 1977, his national security team embarked on a serious study of nuclear policy issues. The result was Presidential Directive (PD)-59 which was an attempt to look at the US deterrent from the Soviet perspective.⁵⁰ Several key recommendations were adopted as a result of this new perspective. To deter the Soviets, the President required options to employ nuclear forces selectively to deter different *levels* of Soviet aggression. This would necessitate options consisting of graduated responses leaving in reserve a force capable of attacks on a broader set of Soviet targets.

⁴⁷ Freedman, *The Evolution of Nuclear Strategy*, 325.

⁴⁸ Ball, *Strategic Nuclear Targeting*, 71.

⁴⁹ National Security Decision Memorandum-242. Policy for Planning the Employment of Nuclear Weapons, January 17, 1974.

⁵⁰ *U.S. Strategic Nuclear Policy (An Oral History)*. DVD. Livermore, CA: Sandia National Laboratories, 2005.

This nuclear strategy based on denying the Soviets the ability to maneuver in a nuclear exchange would become known as Countervailing. It sought to deny the Soviets a range of nuclear options through escalation dominance, rather than to develop these options for the US.⁵¹ Additionally, PD-59 recommended the placement of more emphasis on military targets and less on urban and industrial targets. Finally, PD-59 recommended that Soviet leadership should be targeted as a priority for planners.⁵² With the Soviet leadership and military decimated through countervailing strikes, any definition of victory was made unachievable.

Reagan—Prevailing through Protracted Nuclear Warfighting

The phrase “peace through strength” permeated Ronald W. Reagan’s nuclear weapons employment policy and was codified in National Security Decision Directive (NSDD)-13.⁵³ Reagan departed from his predecessor’s countervailing strategy, believing that it intimidated weak and vacillating leadership, and invited a Soviet attack on the US and its allies. Instead, decisive victory was now the goal—“prevailing” over the Soviets in a nuclear war could occur even after months or years of protracted nuclear exchanges.⁵⁴ To affect this new warfighting policy, Reagan sought qualitative and quantitative improvements in both offensive and defensive capabilities. Offensively, he would expand and hasten the military build-up started under Carter to modernize all three legs of the Triad (i.e., B1 program, MX Missile, Trident Missile, et al). With these highly accurate, flexible, and responsive new weapons, a renewed emphasis on counter-leadership and re-locatable targets would

⁵¹ Freedman, *The Evolution of Nuclear Strategy*, 387.

⁵² Ball, *Strategic Nuclear Targeting*, 78.

⁵³ National Security Decision Directive-13. Nuclear Weapons Employment Policy, December 1, 1981.

⁵⁴ Kunsman, *A Primer on U.S. Strategic Nuclear Policy*, 64.

define Reagan's employment guidance.⁵⁵ Defensively, he enlisted a damage limitation strategy aided by recent technological advances. On March 23, 1983, President Reagan delivered his "Star Wars" speech. This was followed up with NSDD-85, which established the Strategic Defense Initiative (SDI) research program.⁵⁶ The prospect of modern strategic offenses and defenses drove the Soviets to the negotiating table and credited as the impetus for the "graceful decline" of both US and Soviet strategic forces explored in the fourth conceptual theme employed by Presidents George H. W. Bush and Bill Clinton.

George W. Bush—The New Triad and Tailored Deterrence

The final administration using a warfighting approach was that of George W. Bush. On September 11, 2001, non-state actors attacked the US shattering over a decade of peace dividends resulting from the collapse of the former Soviet Union. In its aftermath, US foreign policy experienced a perceptual transformation with profound implications—classic deterrence had failed with US national security professionals left searching for alternative security arrangements. Announced on September 20, 2002, President George W. Bush released his new national security strategy (NSS) outlining a new policy of a preemption.⁵⁷

⁵⁵ Yeaw, Christopher. "History of US Nuclear Policies, Strategies, and Doctrines." Lecture, Seminar on Nuclear Strategic Issues from United States Naval War College, Newport RI, September 3, 2010.

⁵⁶ National Security Decision Directive-85. Eliminating the Threat from Ballistic Missiles, March 25, 1983.

⁵⁷ For an insightful analysis of the differences between preemptive and preventative attack see Karl P. Mueller's, *Striking First: Preemptive and Preventive Attack in U.S. National Security Policy*. (Santa Monica, CA: RAND Project Air Force, 2006). According to Mueller, *preemptive attacks* are based on the belief that the adversary is about to attack, and that striking first will be better than allowing the enemy to do so. Preemption may be attractive because it promises to make the difference between victory and defeat, or merely because it will make the ensuing conflict less damaging than it would be if the enemy struck first. Preemptive attacks are quite rare, though the possibility of preemption was a central concern of nuclear strategists during the Cold War; the archetypical example is Israel's attack against Egypt in 1967 that began the Six-Day War. *Preventive attacks* are launched in response to less immediate threats. Preventive attack is motivated not by the desire to strike first rather than second, but by the desire to fight sooner rather than later. Usually this is because the balance of

Bush's new strategy, abandoned classic paradigms of deterrence that dominated defense policies during the Cold War years, for a forward-reaching, pre-emption policy against hostile states and terrorist groups.⁵⁸ To clarify this new policy, the Bush administration generated a flurry of National Security Policy Documents (NSPD) to define the nuclear contribution to future deterrence efforts. This clarification was codified in NSPD-4, *Transformation of Deterrence*, NSPD-10, *Strategic US Nuclear Forces*, and NSPD-14, *Nuclear Weapons Planning Guidance*.⁵⁹ The resulting 2002 Nuclear Posture Review (NPR) unveiled a new force structure innovation called the New Triad to deal with the emerging threats posed by a range of new competitors and rivals.

As defined in the NPR, the New Triad had three major elements: offenses, defenses, and infrastructure. Offenses comprised non-nuclear and nuclear strike capabilities. Defenses encompassed active defenses, passive defenses, and defensive information operations. Infrastructure contained the aggregate of the labs, plants and workforce that develops, builds, maintains, and modernizes the other elements of the New Triad.⁶⁰ The three elements of the New Triad were tied together by command and control, intelligence, and planning capabilities which offered a flexibility for greater tailoring of deterrent strategies. Instead of a one-size fits all strategy designed for a monolithic Soviet-bloc, a range of threats, including near peer competitors, rouge states, and terrorist networks could be simultaneously deterred using the enhanced characteristics of the New Triad.

military capabilities is expected to shift in the enemy's favor, due to differential rates of growth or armament, or the prospect that the opponent will acquire or develop a powerful new offensive or defensive capability.

⁵⁸ *The National Security Strategy of the United States of America*. Washington: White House, 2002.

⁵⁹ All three of these documents remain classified; however, their overall guidance governed the unclassified 2002 Nuclear Posture Review.

⁶⁰ Donald Rumsfeld. *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2002).

Graceful Decline—Managing the Drawdown

The fourth and final conceptual theme entails the graceful decline precipitated by the collapse of the Soviet Union in 1989. This approach is characterized by three fundamental qualities. The first was that a threat of Soviet invasion of Western Europe launched with little or no warning was no longer a realistic scenario. Second, with the collapse of the Soviet Union, the size of the force and the existing targeting guidance were no longer appropriate and required revision. Finally, the graceful decline period is characterized by unilateral and reciprocal initiatives to reduce strategic nuclear systems. The administration of George H.W. Bush would be the first to oversee this drawdown.

George H.W. Bush —The Presidential Nuclear Initiatives (PNIs)

As President George H.W. Bush took the oath of office in 1989, the Soviets for the first time in almost half a century were not the principle enemy of the US. Nevertheless, due to sheer programmatic momentum, the US and the Soviet Union continued to modernize their arsenals with qualitative and quantitative improvements to their respective Triads.⁶¹ Despite the lack of a clear nemesis, the Bush Administration found comfort in the continued nuclear policy captured in Reagan's NSDD-13.⁶² No strategic innovation in nuclear policy occurred during the Bush Presidency. However, it was clear that the Cold War was over, and the American people were ready to cash in on a long-due peace dividend. This led to a series of unilateral reductions by the US in strategic force numbers, deployments, and research and development programs. On 27 September 1991, President Bush announced these reductions in a televised address to the nation.⁶³ Reductions continued, when, in his 27

⁶¹ Smoke, *Deterrence in American Foreign Policy: Theory and Practice* 309.

⁶² Kunsman, *A Primer on U.S. Strategic Nuclear Policy*, 17.

⁶³ U.S. Presidential Nuclear Initiative, 1991 Address to the Nation on Reducing United States and Soviet Nuclear Weapons. President George H.W. Bush, September 27, 1991. In this address known as PNI I, George H.W. Bush announced the following: strategic bombers and Minuteman II ICBMs were taken off alert; (2) 450 MM II silos were placed in a stand down status pending destruction; (3) all deployed ground-launched, short-

January 1992 State of the Union address, President Bush announced additional nuclear initiatives.⁶⁴ The decisions became known as the Presidential Nuclear Initiatives (PNIs) I and II and set the stage for “cooperative engagement” by the Clinton Administration.

Clinton—Cooperative Engagement

During the early Clinton administration, US nuclear strategy remained stagnant. However, the rapid advance towards arms control treaties and emerging threats from regional powers and non-state actors mandated innovation in nuclear policy. These factors prompted the first nuclear policy revision in 15 years with guidance codified in PDD-60, *Nuclear Weapons Employment Policy Guidance*. PDD-60 affirmed a continuing need for a robust and flexible nuclear deterrent and communicated three central themes.⁶⁵ First, the US would maintain an assured response capability to inflict "unacceptable damage" on any adversary. Second, the US continued to plan a range of options to ensure it could respond to aggression in a manner appropriate to the provocation. This included very limited options, some comprising a single weapon. A final element of Clinton's policy reflected his greatest departure from Reagan and George H.W. Bush on nuclear policy. PDD-60 eliminated previous Cold War rhetoric that specifically referred to winning a protracted nuclear war. These sentiments were echoed in President Clinton's 1999 National Security Strategy with one notable addition, “Nuclear weapons serve as a guarantee of our security

range nuclear forces were recalled to the U.S. and slated for retirement and elimination; (4) nonstrategic nuclear weapons were ordered removed from routine deployment on Navy ships and submarines; and (5) development programs for the mobile ICBM, Small ICBM, and SRAM II missiles were canceled or suspended.

⁶⁴ George H.W. Bush. "State of the Union Address". George H.W. Bush (January 28, 1992). In this address, known as PNI II, B2 procurement was terminated; production of the Peacekeeper missile was stopped; the ACM build was truncated; the Small ICBM program (previously suspended) was canceled; and the production of new warheads (W88) for the Trident missile was stopped.

⁶⁵ The actual text of this document is classified TS/ESI [TOP SECRET / EXTREMELY SENSITIVE INFORMATION] and is likely to remain so for many years to come. However, a multi-source unclassified synopsis of PDD-60 can be found at <http://www.fas.org/irp/offdocs/pdd60.htm>.

commitments to allies and as a disincentive to those who would contemplate *developing or otherwise acquiring* their own nuclear weapons.”⁶⁶ This non-proliferation language was novel, for it was the first time that an aim of US policy was to dissuade others from acquiring the bomb.

Conclusion—The Enduring Principles of US Deterrence Policy

As demonstrated, US nuclear policy has spanned the spectrum of nuclear deterrence thought. The elements of this debate are not new, and have re-emerged over successive administrations. These elements stem from divergent views surrounding four fundamental questions: For what purpose does the US have nuclear weapons? What are the appropriate targets for nuclear weapons? Should prevention or preemption against a developing threat ever be considered? What is the appropriate allocation of defense resources between conventional and nuclear forces? Each administration has viewed these questions through slightly different lenses, colored by constantly changing actors in a dynamic world. Despite these differing views, certain common principles are shared.

Emerging from this chapter are seven enduring principles that govern US nuclear logic and serve as a guide to future US policy makers. First, nuclear weapons are primarily a political instrument. Although they have narrow military utility, their most compelling function has been realized in the diplomatic realm. Second, the US nuclear arsenal exists fundamentally to deter nuclear attack against the US and its allies. Historically, US nuclear policy documents unanimously echo this sentiment, and declare, if at all possible, that the US should not initiate a nuclear war. Third, since their inception, nuclear weapons have

⁶⁶ *The National Security Strategy of the United States of America*. (Washington: White House, 1999), 12.

consistently been sought as a low-cost substitute for fielded forces. The “more bang for the buck” offered by nuclear weapons seems appealing when confronted with limited resources. Fourth, as long as nuclear weapons exist, the US will never be without them. This is a necessary truth accepted as *a priori*. Fifth, nuclear war plans provide flexibility and options to the President. Every president since Kennedy has desired increased flexibility in employment options. Sixth, survivability of retaliatory forces is required to inflict “unacceptable damage” to any adversary, even if that nation strikes first. Finally, US targeting for nuclear weapons has mainly focused on counter-force, counter-military, leadership and war supporting industry. With few exceptions, the US has avoided deliberate targeting of populations.

The original logic, grammar and syntax of US nuclear deterrence was written in its formative years under the Truman, Eisenhower, and Kennedy administrations. Study of these administrations reveals the most prescient lessons surrounding US nuclear declaratory policy evolution for two primary reasons. First, thought surrounding policy rationale was diverse and included the four strategic concepts discussed in this chapter. Nuclear declaratory policies in subsequent administrations, although with slight variation, were derivative of their predecessors from the early nuclear age. A thorough grasp of these rationales gives us a deeper understanding of the strengths and weaknesses of their modern policy analogues. Second, these same administrations witnessed the first increase in the number of nuclear powers. With Great Britain’s test in October of 1952, France’s in February of 1960, and China’s in October of 1964, proliferation began to flourish. In an attempt to arrest this disturbing trend, the US sought nuclear policies in consonance with its deterrence and nonproliferation efforts. It is these nonproliferation efforts and US attempts to shove the proverbial “genie back in the bottle” which occupy our interest in the next chapter.

Chapter 2

Eluding Armageddon: US Nonproliferation Efforts

“The proliferation of nuclear weapons poses the greatest threat to our national security.” So warned President Barack Obama in his 2010 National Security Strategy.¹ To address the growing dangers posed by nuclear proliferation, the US has recently stepped up efforts to rein in this potential menace. However, nonproliferation initiatives have a long and inconsistent past emerging almost simultaneously with the first nuclear weapons test on July 16, 1945. Over the past 65 years, members of the global community have attempted to build an international nonproliferation regime to curtail the spread of these weapons.² This regime consists of international agreements and cooperative national actions that attempt to prevent the spread of nuclear weapons to additional nations or to non-state actors.³ These agreements did not form quickly or capriciously, and represent decades of groundwork.

This chapter explores the most influential nonproliferation efforts beginning with post-WWII attempts and culminates with the release of the Obama administration’s 2010 Nuclear Posture Review. It identifies and evaluates five distinct nonproliferation initiatives: the Baruch Plan, Eisenhower’s Atoms for Peace Program, the Nuclear Nonproliferation Treaty (NPT), Proliferation Technology Control Regimes (PTCR), and

¹ *The National Security Strategy of the United States of America*. (Washington: White House, 2010), 4.

² In international politics, a regime is a collection of rules or behavioral expectations that provide a framework for the interactions among states or other actors. Robert Keohane incisively describes the intricacies of such regimes in, *After Hegemony: Cooperation and Discord in the World Political Economy*. (Princeton, N.J., Princeton University Press 2005) 50.

³ George Bunn, Christopher F. Chyba, and William James Perry. *US Nuclear Weapons Policy: Confronting Today's Threats*. (Stanford, Calif.: Center for International Security and Cooperation, Freeman Spogli Institute for International Studies; 2006), 75.

counterproliferation efforts.⁴ Each initiative is explored with an aim to highlight their original logic and intent while examining their individual worth, shortfalls, and impacts on the current regime. These five nonproliferation initiatives are targeted to meet two primary objectives. First, investigation of historical nonproliferation efforts gives us a better understanding of what the US is doing today and why. Second, examination of nonproliferation initiatives helps to tease out the relationships existing between these efforts, US nuclear declaratory policy, and concepts of nuclear deterrence. Understanding these linkages will aid in the formation of future policies that are in consonance and better positioned to meet the needs of US grand strategy.

The Baruch Plan: Failure of Supranational Nuclear Control

Nuclear weapons and the need to prevent their proliferation emerged almost simultaneously and presented a growing strategic conundrum for the US. In 1946, the US enjoyed a nuclear monopoly, but was attentive to an aggressive Soviet bomb program and their growing availability of nuclear knowledge and materials.⁵ Focused on the vast destructive power of atomic weapons and the perils of an international arms race, President Truman established a scientific committee under the supervision of Dean Acheson and David Lilienthal.⁶

⁴ For an insightful and lengthy analysis of nonproliferation regimes see Henry D. Sokolski, *Best of Intentions: America's Campaign Against Strategic Weapons Proliferation*. (Westport, Conn.: Praeger, 2001)

⁵ In June 1946, the Soviet Union was rushing to complete a sprawling nuclear complex of laboratories, reprocessing facilities, and nuclear weapon test sites in an attempt to catch the United States. Under the guidance of physicist Igor Kurchatov, who had access to an extensive Soviet intelligence network and large reserves of forced labor from prison camps, the Soviet bomb program succeeded in testing its first nuclear device in September 1949 at the Semipalatinsk test site in Soviet Kazakhstan several years sooner than expected by US intelligence.

⁶ The Acheson-Lilienthal Commission was chartered by then Undersecretary of State, Dean Acheson, to advise the Truman administration on the new menace of nuclear weapons. In January 1946, Acheson asked David E. Lilienthal, a former Director of the Tennessee Valley Authority, to chair this panel. Lilienthal's panel produced the *Report*

The Acheson-Lilienthal Commission issued a report in March 1946, outlining the confounding threat posed by nuclear proliferation and the unqualified advantage atomic weapons gave to an aggressor. The existential threat outlined in the report fueled calls within the administration that atomic weapons should be used first rather than as a last resort. Appeals for a preemptive strike against nascent Soviet nuclear facilities or any foreign power with which the US was not firmly allied began to gain momentum.⁷ Truman renounced this idea, and chose to defuse calls for preemption by endorsing a proposal for a supranational authority to govern all atomic activities. This authority would ensure, through a system of international inspectors, that such programs remained oriented toward peaceful uses of nuclear energy.⁸ The report also called for the eventual elimination of atomic weapons once the new international authority was in place and firmly established.

The Baruch Plan, presented to the newly established U.N. Atomic Energy Commission on 14 June 1946, was a toughened version of the Acheson-Lilienthal proposal and the first international effort to curb proliferation.⁹ The plan, described by historian Walter A. McDougall as “The boldest and most sweeping nonproliferation plan ever proposed,” called for an international authority to police all stages of development and use of atomic energy.¹⁰ The plan also proposed tight controls over technology and materials for energy and weapons production. It also

on the International Control of Atomic Energy, a seminal document of the early Cold War era. The report contained possible methods for the international control of nuclear weapons and would serve as the source document for the 1946 Baruch Plan.

⁷ Freedman, Lawrence. *The Evolution of Nuclear Strategy*. (New York: St. Martin's Press, 1981) 49.

⁸ Department of State, *The Acheson-Lilienthal Report, Publication 2498* (Washington D.C.: Government Printing Office, 1948)

⁹ Bernard Mannes Baruch was an American financier, statesman, and political consultant. After his success in business, he devoted his time toward advising US Presidents Woodrow Wilson and Franklin D. Roosevelt on economic matters. In 1946 he was appointed the United States representative to the United Nations Atomic Energy Commission (UNAEC) by President Harry S. Truman.

¹⁰ Walter A. McDougall. *The Heavens and the Earth: A Political History of the Space Age*. (New York: Basic Books, 1985), 85.

suggested a turnover of weapons to the United Nations Atomic Energy Commission. Finally, the plan called for rigorous verification regimes with “swift and severe” punishments, and a veto-proof provision to remove any obstruction of the governing body in dispensing sanctions. During a dramatic presentation to the Energy Commission, Baruch pleaded for Soviet adoption: “We are here to make a choice between the quick and the dead—that is our business. Behind the black portent of the atomic age lies a hope which, seized upon with faith, can work our salvation. If we fail, then we have damned every man to be the slave of fear.”¹¹

The Soviets were not persuaded. Using a presumption that nuclear weapons offer unqualified offensive value, the Soviets countered that the US should first eliminate their weapons and declare a no-first-use policy as a prerequisite to any further discussion.¹² Furthermore, the proposed verification regime was too intrusive for a closed Soviet society and the veto-proof provision put the aggressive Soviet program in jeopardy. The Soviets also staunchly opposed any turnover of weapons to a supranational organization. However the US, negotiating from a position of both strength and fear was not in a compromising mood. The lack of agreement on these key issues killed the Baruch plan.

Three standout lessons are evident from this episode in early nuclear non-proliferation. The Baruch plan offered the first insights into US attempts to dissuade a nuclear “have-not” from acquiring weapons. The most obvious lesson was that benefits from such regimes must address each participant’s most prevalent concerns. Any proposed plan that did not reduce the security dilemma of partakers was doomed to failure. The rejection of weapons reductions and eschewing a no-use

¹¹ Bernard Baruch. "The Baruch Plan: Statement by the United States Representative to the United Nations." Address, United Nations Atomic Energy Commission from United Nations, New York, June 14, 1946.

¹² Sarah J. Diehl, Moltz, James Clay, *Nuclear Weapons and Nonproliferation: A Reference Handbook. Contemporary World Issues.* (ABC-CLIO, 2008), 6.

policy proved deadly for this initial non-proliferation overture. Of course, the imbalance in US/Soviet conventional capabilities in Europe meant that the United States could not hold back nuclear weapons, making such promises both unwise and dangerous.¹³

Second, the Baruch Plan foreshadowed the difficulties of the regime verification problem. The Soviets judged the Baruch proposal as structured in such a way that the US could retain its edge in nuclear technologies.¹⁴ The Soviets believed the nuclear expertise, exclusively held by the US, could never be eliminated or forgotten. However, under the authority vested in the Baruch plan, other nations would be prevented from conducting research that could reproduce these technologies. Thus, the US could solidify its monopoly on weapons technology and leave it able to regain quickly its nuclear advantage in the event that the underlying agreement broke down.

Ultimately, mutual suspicion between the Soviet Union and the US led to both sides requiring intrusive forms of verification before adoption of such a far-reaching program. Yet, suggestions by either nation to allow on-site inspections of the other side's facilities were interpreted as attempts at spying. Thus, any future attempts at an effective nonproliferation regime would not only require extremely difficult negotiations on the main topic of limiting atomic weapons, but also on the issue of the verification regimes designed to monitor compliance.¹⁵

Finally, difficulty in the enforcement of violations would plague the Baruch Plan as well as its progeny. The Soviets interpreted the "swift and sure" punishment provision contained in the plan as an attempt to turn the United Nations into an alliance to support the US threat of war

¹³ Freedman, *The Evolution of Nuclear Strategy*, 67.

¹⁴ Richard Smoke. *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War*. (3rd Ed. New York: McGraw-Hill, 1993), 128.

¹⁵ Pat Norris. *Spies in the Sky: Surveillance Satellites in War and Peace* (New York: Springer-Verlag, 2007), 91.

against the USSR.¹⁶ Since all other contenders were ravaged by destruction caused during WWII, only the US could conceivably administer such a punishment to the Soviet Union. Any viable regime in the future would insist that violations be equitably adjudicated, and that sanctions be credibly administered.

Eisenhower's Atoms for Peace

Several key nuclear weapon events occurred after the rejection of the Baruch Plan that reinvigorated US interests in nonproliferation. With the Soviet explosion of a nuclear device in August 1949, the US feared that the Soviets might use its growing nuclear force to destroy the US at any time. Additionally, Britain, which had been a partner in the Manhattan Project, tested its own weapon in October 1952. Finally, in July 1953, the Soviets tested their first hydrogen bomb, proving to most policymakers that US nonproliferation strategies were woefully inadequate and required revision.

Focusing on the knowledge that a single hydrogen bomb could destroy New York City, the new US president, Dwight D. Eisenhower, sought an international regime that would encourage the US and the Soviets to reduce their stockpiles of nuclear weapons.¹⁷ In December 1953, President Eisenhower made a major change in U.S. policy. In his "Atoms for Peace" speech to the UN General Assembly, Eisenhower promised to encourage the development and spread of atomic energy for peaceful purposes. In an attempt to dampen an arms race, Eisenhower suggested that the US and Soviets should make joint contributions of nuclear weapons fissile material (i.e., plutonium and highly enriched uranium) to a newly created International Atomic Energy Agency

¹⁶ Mike Moore. *Twilight War... The Folly of US Space Dominance* (Oakland, CA: Independent Press, 2008), 221.

¹⁷ George Bunn, Christopher F. Chyba, and William James Perry. *US Nuclear Weapons Policy Confronting Today's Threats*. (Stanford, Calif.: Center for International Security and Cooperation, Freeman Spogli Institute for International Studies; 2006), 43.

(IAEA).¹⁸ This reduction in available materials would reduce the quantities available on both sides for weapons production. The IAEA would accept these fissile materials from nuclear states to fuel peaceful nuclear power projects worldwide. Additionally, participants would receive peaceful nuclear technologies and assistance in the construction of energy generating nuclear reactors.

Eisenhower learned from the inadequacy of the previous US sponsored regime. Atoms for Peace avoided elements that the Soviets had found unacceptable in the Baruch Plan, such as elaborate on-site inspections, putting weapons in the hands of an international agency, and strict punishment for noncompliance. It also gave the rest of the world an incentive, in the form of help with nuclear power generation. While Atoms for Peace built support for pushing the superpowers into an agreement, it also created sobering new issues.¹⁹ The US preoccupation with halting vertical proliferation between the US and Soviets caused an imbalance in its overall nonproliferation efforts.²⁰ The program's enthusiasm for sharing civilian nuclear technology, expertise, materials, and hardware had drawbacks. These same technologies had grim dual uses and could prove invaluable for making bombs.

The US did address concerns over the spread of nuclear weapons to other countries.²¹ As originally proposed to the IAEA, the Atoms for Peace program contained strong safeguards that would prevent participants from using the materials produced in power generation from being diverted to the use of bombs. Several countries including India,

¹⁸ Dwight D Eisenhower. *Atoms for Peace: Dwight D. Eisenhower's address to the United Nations on December 8, 1953*. (Washington, D.C.: National Archives and Records Administration, 1989)

¹⁹ Phillip Margulies. *Nuclear Nonproliferation*. (New York, NY: Facts on File, Inc., 2008), 26.

²⁰ Proliferations can occur along two major routes; Vertical and horizontal. Vertical proliferation is best described as the quantitative and qualitative build-up of a current nuclear weapon state's strategic arsenals. Horizontal proliferation is defined as the increase in numbers of nations obtaining nuclear weapons and ballistic missiles.

²¹ Henry D. Sokolski. *Best of Intentions: America's Campaign against Strategic Weapons Proliferation*. (Westport, Conn.: Praeger, 2001), 31.

France, and Switzerland opposed these safeguards and threatened to derail program.²² In its eagerness to obtain an agreement, the US dropped the safeguards, hoping that somehow they could be put back later. They were never put back in, which left the door open to the dangers of horizontal proliferation.

The prospect of horizontal proliferation gave rise to a thorny new problem for the US, by creating a potentially destabilizing effect on nuclear deterrence. This phenomenon threatened to tip the delicate balance of terror struck by Eisenhower's strategy of Massive Retaliation.²³ With multiple nuclear weapons states, deterrence promised to become more complicated, delicate, and prone to catastrophic breakdown. In a world full of nuclear actors, accidental or catalytic regional nuclear wars could more easily erupt. Inherent in this prospect was entangling alliances that threatened to draw the superpowers into a general nuclear war by use of only one or a few weapons. Paradoxically, with its promotion of nuclear transfers and loose safeguards, Atoms for Peace, exacerbated the problem of horizontal proliferation. In exchange for mere pledges of non-weaponization, participating states were given much of what they needed to make a bomb. This made the acquisition of a nuclear capabilities capability more likely and thus deterrence between the superpowers potentially less stable.

Additionally, the Soviets saw the Atoms for Peace proposal as reflective of US hypocrisy on nuclear weapons non-proliferation. During negotiations, the Soviets pushed for the US to adopt a no-first-use

²² Rejected safeguards included preventing nations from keeping significant amounts of spent reactor fuel (which contained weapons usable plutonium), conducting all reprocessing and enrichment in regional parks, and safeguarding fertile materials (natural and depleted uranium) that might be irradiated to make fissile materials. Lack of adoption created conditions ripe for future horizontal proliferation.

²³ Campbell Craig. *Destroying the Village: Eisenhower and Thermonuclear War*. (New York: Columbia University Press, 1998), 69.

policy.²⁴ A no-first-use (NFU) policy was something that the USSR, inferior in nuclear weapons but superior in number of troops, found easy to offer. Adoption of a NFU policy would indicate that the US was reducing the relevancy of nuclear weapons in its grand strategy and signal the US value of disarmament commitments under the Atoms for Peace program.²⁵ Yet the Eisenhower administration refused to concede its right to strike first. The Soviet Union portrayed the US as hypocritical on this point. They may have been right; in the absence of such a policy, proliferation norms against the spread and use of nuclear weapons would work at cross-purposes with US nonproliferation efforts. Eisenhower's enthusiasm for sharing peaceful nuclear energy as well as an inability to eschew the value of nuclear weapons resulted in fueling more proliferation than it curbed.²⁶

The Nuclear Nonproliferation Treaty: Tackling Horizontal Threats

The Cuban crisis of 1962 gave the world an opportunity to observe negotiations at the brink of nuclear war.²⁷ In its wake came more alarm, as the Chinese exploded an atom bomb in 1964 and followed it with a hydrogen bomb in 1967. Shortly thereafter, the French exploded their first hydrogen weapon in 1968, further expanding the "nuclear club."

The US and the Soviet Union came to understand that they had a common interest in preventing more states from acquiring nuclear weapons. They also recognized that the cold war deterrent relationship

²⁴ Richard Smoke. *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War*. (3rd Ed. New York: McGraw-Hill, 1993) 129.

²⁵ The Stanley Foundation. "A New Look At No First Use." Policy Dialogue Brief. www.stanleyfoundation.org/publications/pdb/NoFirstUsePDB708.pdf/ (accessed November 7, 2010), 2.

²⁶ Sokolski, *Best of Intentions: America's Campaign against Strategic Weapons Proliferation*, 4.

²⁷ For a frightening and incisive analysis of the events, issues and personalities involved in the world's most dangerous thirteen days, see Norman Polmar and John Gresham's, *DEFCON-2: Standing on the Brink of Nuclear War during the Cuban Missile Crisis*. (Hoboken, N.J.: Wiley, 2006).

between *just* the US and Soviet Union was fragile.²⁸ More nuclear players reduced security for all, multiplying the risks of miscalculation, accidents, unauthorized weapons use, and an escalation in tensions which could result in nuclear war.²⁹ Additionally, smaller nations began to worry that a conflict involving the new nuclear weapons states would lead to war between the superpowers with devastating effects on the global community. Such concerns suggested that a new nonproliferation regime was required to check the growth of aspiring nuclear states. As a result, Ireland's Foreign Minister, Frank Aiken, spearheaded an effort by these smaller nations to limit the spread of nuclear weapons. Aiken's original 1959 proposal was adapted into the Nuclear Nonproliferation Treaty (NPT) which was passed at the Conference of the Eighteen-Nation Committee on Disarmament in 1968.³⁰

The US, Soviet Union, United Kingdom, and 59 other countries signed the Nuclear Non-Proliferation Treaty on 1 July 1968.³¹ The NPT consisted of a preamble and eleven articles, generally broken into three sections: nonproliferation (Articles I-V), disarmament (Article VI), and the right of peaceful use of nuclear technology (Articles VII-XI). The key articles of the NPT center on articles I-IV, VI and X.³²

The first two articles were aimed at slowing the spread of nuclear weapons. The nonnuclear weapon states (NNWS) signing committed not to develop nuclear weapons. Nuclear states (NWS) signing committed not

²⁸ Bunn, *Nuclear Weapons Policy: Confronting Today's Threats*, 44. Bunn posits that the Chinese test focused Washington's attention on nonproliferation issues, with Moscow especially concerned that West Germany might acquire nuclear weapons. Both superpowers now had a vested interest in curbing the disturbing proliferation trend.

²⁹ The nuclear accidents at Palomares (1966) and Thule (1968) spurred global fears of accidents and unauthorized use of weapons which could become more likely as the result of unchecked nuclear proliferation.

³⁰ "Nuclear Non-Proliferation Treaty [NPT]." Federation of American Scientists. <http://www.fas.org/nuke/control/npt/> (accessed February 19, 2011).

³¹ The NPT entered into force with US Senate ratification on 5 March 1970.

³² International Atomic Energy Agency. "Treaty on the Non-Proliferation of Nuclear Weapons, April 22, 1970." www.iaea.org/Publications/Documents/Infocircs/Others/infocirc140.pdf (accessed February 18, 2011).

to provide them. Article III governed IAEA inspections and safeguards for NNWS, with signatories pledging to submit to a system of verifications, to ensure fissionable materials were not diverted to weapons programs. Article IV contained a large incentive for NNWS. It confirmed the “inalienable right” of all the parties to develop research, production and use of nuclear energy for peaceful purposes. It also pledged the NWS to help NNWS in developing nuclear energy for peaceful purposes and in obtaining facilities from the nuclear powers. According to Article VI, NWS promised to pursue “negotiations in good faith” on effective measures relating to the cessation of nuclear arms racing and the pursuit of disarmament. The remaining five articles were technical in nature, covering engagement with other treaties, rules for amending, signing, ratifying the NPT, and the schedule of recurring reviews of the treaty.³³ Of special note, Article X described conditions for withdrawal from the treaty by establishing a three months’ notice of intent to abandon the agreement.

The NPT has been the cornerstone of the nonproliferation regime, achieving results which eluded its predecessors. Perhaps its most notable achievement is that the NPT provided a safety net for states to decide not to acquire nuclear weapons. With the expectation that other states would forgo nuclear weapons and the presence of a credible verification regime, the security dilemma caused by nuclear “have and have-nots” has been somewhat mollified. The primary placation tool used by NPT nuclear weapons states has been the use of negative and positive security assurances to garner treaty support of nonnuclear weapons states.³⁴ Thus, the NPT offers meaningful security assurances,

³³ Margulies, *Nuclear Nonproliferation*, 29.

³⁴ Negative security assurances are no-first-use promises by nuclear weapons states in which they agree not to use nuclear weapons against any compliant NPT nation not possessing nuclear weapons. These declarations were intended to help reassure nations that they did not need to acquire nuclear weapons because the nuclear weapon states would not use weapons against them. Positive security assurances were also extended to NPT compliant nations not having nuclear weapons. In this case, nuclear weapons

in return for a pledge not to pursue nuclear weapons. These assurances have been lauded for slowing the proliferation of nuclear weapons.³⁵

Despite its successes, the NPT has been criticized for two important shortfalls centering on Articles IV and VI. The biggest weakness of the treaty stems from the inadequacy of merely securing end-use pledges in exchange for sensitive nuclear technology. The loophole concerns the language found in Article IV governing nuclear development which states, “Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty.”³⁶ Under the auspices of this provision, states can get very close to the ability to produce nuclear weapons.³⁷ Arguably, Article IV provides cover for countries who wish to manipulate the rules providing all of the requisite technologies, materials and equipment to quickly “go nuclear”. Once on the precipice of nuclear weapons capability, nations can withdraw from the treaty under Article X and complete the weaponization process within months.³⁸ In this sense, the NPT has failed to solve the most vexing problem it started out to remedy—horizontal proliferation—and perhaps even enabled it, as demonstrated with the nuclear programs of Iraq, Iran, and North Korea.

The second shortfall arises from the controversial verbiage found in Article VI. The NPT states, “Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to

states would seek immediate UN Security Council remedies to provide assistance to any non-nuclear weapon NPT member being threatened by another nation’s nuclear weapons.

³⁵ Bunn, *Nuclear Weapons Policy: Confronting Today's Threats*, 88.

³⁶ International Atomic Energy Agency. "Treaty on the Non-Proliferation of Nuclear Weapons, April 22, 1970." www.iaea.org/Publications/Documents/Infocircs/Others/infocirc140.pdf (accessed February 18, 2011).

³⁷ Carl E. Behrens. *Nuclear nonproliferation Issues* (Washington, D.C.: Congressional Research Service, Library of Congress, 2008) 13.

³⁸ Sokolski, *Best of Intentions: America's Campaign against Strategic Weapons Proliferation*, 56.

cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.”³⁹ For many NNWS, this pledge embodies the nucleus of the NPT and the most important provision of the treaty.⁴⁰ This is the case for two primary reasons. First, without progress toward nuclear weapons disarmament, if not “general and complete disarmament”, NNWS see the NPT as perpetuating an unequal world of nuclear have and have-nots. This leaves an untenable situation where NWS could use their nuclear arsenals to coerce NNWS despite previous security assurances. Insecurities generated by this condition has the potential to create conditions where NNWS feel compelled to pursue clandestine programs to hedge their position to avoid this dilemma. Second, although the horrifying prospect of horizontal proliferation ignited initial NPT efforts, vertical proliferation between the superpowers remains the primary global danger. With the US and Soviet Union collectively having as many as 60,000 nuclear weapons at the height of the cold war, planetary destruction still rests in the hands of Washington and Moscow.⁴¹ Without nuclear weapons reduction progress on this vertical front, horizontal efforts have reduced impact on global nuclear safety.

Proliferation Technology Control Regimes

The inadequacy of merely securing peaceful end-use pledges in exchange for supplying sensitive civilian nuclear technology became evident on 18 May 1974. On that date, India exploded a “peaceful” nuclear device that employed “civilian” US, Canadian, and Western

³⁹ International Atomic Energy Agency. "Treaty on the Non-Proliferation of Nuclear Weapons, April 22, 1970." www.iaea.org/Publications/Documents/Infocircs/Others/infocirc140.pdf (accessed February 18, 2011).

⁴⁰ Michael Gerson. "No First Use." *International Security*, Fall 2010, 41.

⁴¹ D. M. Kunsman,, and Douglas B. Lawson. *A Primer on U.S. Strategic Nuclear Policy*. (Albuquerque, NM: Sandia National Laboratories, 2001), 51.

European reprocessing and heavy water technology and hardware.⁴² Deciding that the current nonproliferation regime was insufficient to slow the spread of nuclear weapons, the US led an effort to get nations with advanced nuclear technology to restrict their exports of special nuclear materials and nuclear technology to the world's trouble spots.⁴³ These efforts resulted in the formation of the Nuclear Suppliers Group (NSG) in 1974 and the Missile Control Technology Regime (MCTR) in 1987.

The Nuclear Suppliers Group brought together nations from both inside and outside the NPT to strengthen export controls and safeguards requirements, which now included enrichment and reprocessing technologies.⁴⁴ These new requirements would help ensure that materials produced at facilities receiving international assistance, as well as other materials from unsafeguarded facilities, could not be made into nuclear weapons. Under NSG guidelines, nuclear materials, equipment, and know how would be restricted "when there is an unacceptable risk of diversion" to weapons development programs.⁴⁵ The intent of this verbiage was to strengthen the NPT by closing the loophole in Article IV. Under NSG guidelines, supplier governments would have to exercise increased discretion regarding which nations should receive sensitive

⁴² Karsten Frey. *India's Nuclear Bomb and National Security*. (London: Routledge, 2006), 165. At the time of its nuclear test, India was not an NPT signatory because its nuclear program was too far down the road by 1968. However, its acquisition of nuclear weapons proved to the nuclear weapons states that provisions of the NPT alone were insufficient to stop proliferation.

⁴³ Special nuclear material is a term used by the US Nuclear Regulatory Commission (NRC) to classify fissile materials. The NRC divides special nuclear material (SNM) into three main categories: Strategic SNM, SNM of moderate strategic significance, and SNM of low strategic significance according to the risk and potential for its direct use in a clandestine nuclear weapon or for its use in the production of nuclear material for use in a nuclear weapon.

⁴⁴ At the time of NSG formation, nations with advanced nuclear technology, such as France, were not signatories of the NPT. France signed the NPT on June 3, 1991. It was important to bring these countries into the NSG to plug technology proliferation holes in the NPT.

⁴⁵ "Nuclear Suppliers Guidelines pt. 2." <http://www.nuclearsuppliersgroup.org/Leng/03-member.htm> (accessed May 6, 2011), 5.

nuclear technologies. The new arrangement also discouraged sales to countries likely to use technologies for aggressive military purposes.

The use of a “trigger list” aided in avoiding circumvention of NSG guidelines. Select non-nuclear states could only import listed items if certain IAEA safeguards were agreed to. The suppliers list included nuclear related dual-use equipment, materials, software, and technology that could make a major contribution to “nuclear explosive activity” or an “unsafeguarded nuclear fuel-cycle activity.” The NSG’s efforts are generally recognized as slowing the proliferation of sensitive nuclear technologies to unstable regions, but the NSG was not a panacea.⁴⁶ Because important dual-use items used both for making weapons and for operating reactors exist, NSG guidelines could never fully eliminate the export of these items altogether. Additionally, not all nuclear suppliers are members of the NSG and comply with the guidelines.⁴⁷ Because of these loopholes, the NSG still left the door open to potential proliferators interested in acquiring nuclear weapons. This prompted concerned nations to innovate further on the nonproliferation front, specifically, in impeding delivery of these weapons if nonproliferation failed.

The ability to deliver nuclear weapons using ballistic missiles clearly compounds the danger presented by a nuclear weapons state.⁴⁸ However, like nuclear technology, missile technology has a peaceful use—it can assist space exploration and the launch of satellites. To protect against non-peaceful uses, the Missile Technology Control Regime (MTCR) was formed. This international regime prohibited export of advanced missiles to countries likely to use them for aggressive military purposes. Not unlike the NSG, the language contained in its

⁴⁶ Bunn, *Nuclear Weapons Policy: Confronting Today's Threats*, 112.

⁴⁷ Behrens, *Nuclear Nonproliferation Issues*, 7. Proliferators such as Pakistan and North Korea are not members of the NSG and have not observed the guidelines by having dealings with the A. Q. Khan proliferation ring.

⁴⁸ John Lewis Gaddis. *The Cold War: A New History*. (New York: Penguin Press, 2005) 68.

guidelines allowed exporting states to withhold missile technologies, with all such transfers considered on a “case by case basis”.⁴⁹ According to the MTCR guidelines, the regime’s primary aim was to restrict the proliferation of missiles, complete rocket systems, unmanned air vehicles, and related technology for those systems capable of carrying a 500-kilogram payload at least 300 kilometers, as well as systems intended for the delivery of weapons of mass destruction (WMD).

Despite some successes in curbing both nuclear and delivery system proliferation, the NSG and MTCR possessed three seams that left the international community seeking regime expansion. First, both the NSG and MTCR attempted to address an important non-military cause of nuclear proliferation—the sale of weapons technology is very profitable.⁵⁰ Countries have shown and demonstrated repeatedly that they are willing to blatantly violate these regimes in pursuit of higher economic and political goals. Second, the lack of universal membership in these regimes as well as gaps in compliance monitoring creates serious nonproliferation concerns. Many of the world’s top proliferators are not members of the regime and bound by its prohibitions on sharing nuclear and delivery system technology. This leaves nuclear aspirants with willing partners to help them pursue their nuclear ambitions.

Finally, both regimes are informal, and represent voluntary associations of nations. No formal enforcement mechanism exists for applying sanctions to violators. Problems of proliferators’ identification, attribution and punishment plague the regime leaving urgent questions surrounding the NSG and MTCR’s long-term effectiveness. A lack of absolute confidence in these regimes has driven the US and others to explore the ramifications of nonproliferation failures. Many nations have concluded if they cannot prevent potential adversaries from acquiring

⁴⁹ "Guidelines for Sensitive Missile-Relevant Transfers." Missile Technology Control Regime / Le Régime de Contrôle de la Technologie des Missiles. <http://www.mtc.info/english/guidetext.htm> (accessed February 20, 2011).

⁵⁰ Margulies, *Nuclear Nonproliferation*, 31.

nuclear weapons then tools of counterproliferation and consequence management become essential.⁵¹

Counterproliferation and the Proliferation Security Initiative

Thus far, we have established that the successful nuclear proliferation by an aggressive state or the occurrence of a single nuclear weapons explosion could have catastrophic effects on US national and global security. Prior sections in this chapter have emphasized the challenges of reducing nuclear these types of dangers through advancement of nonproliferation regimes. However, when it became clear in the 1990s that nonproliferation efforts would sometimes fail, counterproliferation measures emerged as an important adjunct to US national nuclear strategy to address these concerns.⁵² Such proliferation failures would require the US and other partner nations to contain and possibly defeat nuclear-armed adversaries as well as suppress illicit trade among them.⁵³

If nonproliferation consists of diplomatic, informational and economic measures to prevent the spread of nuclear weapons, counterproliferation is its military component. Launched by the Clinton administration in 1993, the Counterproliferation Initiative expanded under the sponsorship of Secretary of Defense Les Aspin who argued the spread of nuclear weapons was “America’s number one security concern.”⁵⁴ Aspin’s charge to the DOD was to develop new capabilities

⁵¹ USAF/DTRA WMD Conference, *Avoiding Nuclear Catastrophe*, 13 August 2010, 5.

⁵² Despite the best efforts of nonproliferation regimes, several NPT signatories were able to illegitimately employ dual-use technologies and harbor clandestine nuclear programs. Countries such as Iran, Libya and Iraq have been suspected of illicit nuclear weapons activities dating back to the late 1980s and early 1990s.

⁵³ William Perry, and James Schlesinger. *The Report of the Congressional Commission on the Strategic Posture of the United States: Hearing before the Committee on Armed Services, United States Senate, One Hundred Eleventh Congress, first session, May 7, 2009.* (Washington: U.S. G.P.O.: 2010) 89.

⁵⁴ See remarks by Honorable Les Aspin, Secretary of Defense, National Academy of Sciences, Committee on International Security and Arms Control, December 7, 1993, reprinted in Carnegie Endowment for International Peace, *The Counterproliferation*

to defend against proliferation, most notably for preemptive or preventative military action. In concept, these new military options would strengthen and augment traditional nonproliferation efforts.

The counterproliferation concept faced its first major test in 1998 when US cruise missiles were employed against suspected Sudanese and Iraqi WMD production plants. Neither of these unilateral actions was strategically successful, and foreshadowed three challenging impediments for future US counterproliferation efforts.⁵⁵ The first stems from the potential legal and moral objections inherent in preemption policies. In both cases, despite actionable intelligence, it was exceedingly difficult to establish, and prove to a global audience, sufficient threat, intent and capability to warrant the preemptive actions.⁵⁶ In the absence of this damning proof, legitimacy surrounding these strikes was diminished. This loss of legitimacy resulted in mild international condemnation, but it caused a loss of prestige nonetheless.⁵⁷

Additionally, potential nuclear targets are usually difficult to fix, find, target and destroy. Because nuclear facilities are of great strategic value, they are usually well hidden, defended, and hardened. Protection

Debate (Washington, D.C.: Carnegie Endowment for International Peace, November 17, 1993).

⁵⁵ Sokolski, *Best of Intentions: America's Campaign against Strategic Weapons Proliferation*, 96. The Al-Shifa pharmaceutical factory was destroyed killing one employee and wounding eleven. Critics of the attack have estimated that tens of thousands of Sudanese civilians died throughout Sudan due to a shortage of drug supplies caused by the strike. Additionally, the destruction of Saddam Hussein's WMD plants could hardly stop his programs since reconstitution efforts were not difficult.

⁵⁶ Michael Walzer. *Just and Unjust Wars: A Moral Argument with Historical Illustrations*. (New York: Basic Books, 1977), 81. For preemption to be justified, the attacker must have knowledge that an attack has already been set in motion or is imminent.

⁵⁷ Questions of legitimacy would continue to plague US Counterproliferation policies when in 2003 the US invaded Iraq citing the most important reason as the danger that Iraq possessed, or in the near future would be capable of producing, weapons of mass destruction. US preemption policy was codified in President George W. Bush's 2002 National Security Strategy stating, "The United States has long maintained the option of preemptive actions to counter a sufficient threat to our national security. The greater the threat, the greater is the risk of inaction—and the more compelling the case for taking anticipatory action to defend ourselves, even if uncertainty remains as to the time and place of the enemy's attack. To forestall or prevent such hostile acts by our adversaries, the United States will, if necessary, act preemptively."

of these facilities normally includes both active and passive measures, making targeting and execution exceptionally difficult.⁵⁸ The challenges associated with defeating these measures raise the costs and reduce potential benefits of such an attack. These factors increase the political and military consequences of failure, and thus can serve as a powerful deterrent to preemption.

Finally, program reconstitution is always a looming specter for one who employs preemption. Although preemption has the potential to set a fledgling program back temporarily, a committed nuclear aspirant can usually regenerate capabilities expeditiously.⁵⁹ Once knowledge surrounding nuclear weapons production is obtained, it can lay dormant or used elsewhere or until new facilities are built. Additionally, once new facilities are commissioned, they likely will be protected by more robust defenses, making future attacks exceedingly difficult. Furthermore, an aggravated security dilemma caused by a preemptive attack may backfire on the attacker. Ironically, preemption may cause the attacked nation to pursue nuclear weapons with increased vigor. To deter future preemption, the attacked nation may wish to alter the perceived cost/benefit calculus of a repeat attack. The promise of imposing unacceptable costs by the use of nuclear weapons may tempt a nuclear aspirant to redouble their efforts.

The inadequacies demonstrated by unilateral counterproliferation efforts necessitated a more multilateral approach. However, what was not needed was another regime without enforcement mechanisms and absent an ability to apply sanctions to violators. To create a counter-

⁵⁸ An example of active defenses would be a robust surface-air-missile presence surrounding a WMD facility while passive defenses might include geographical distribution of facilities and deeply burying a centrifuge facility in the base of a mountain.

⁵⁹ Sammy Salama, and Karen Ruster. "CNS - A Preemptive Attack on Iran's Nuclear Facilities: Possible Consequences - August 12, 2004 - Research Story." James Martin Center for Nonproliferation Studies (CNS). <http://cns.miis.edu/stories/040812.htm> (accessed February 26, 2011).

proliferation regime with “teeth”, the George W. Bush administration launched the Proliferation Security Initiative (PSI), involving dozens of countries in cooperative counterproliferation activities.⁶⁰ This global effort aimed to stop trafficking of weapons of mass destruction (WMD), their delivery systems, and related materials to and from states and non-state actors of proliferation concern.⁶¹

Launched on May 31, 2003, US involvement in the PSI stemmed from the U.S. National Strategy to Combat Weapons of Mass Destruction issued in December 2002. The strategy recognized the need for more robust tools to stop proliferation of WMD around the world, and specifically identified interdiction as an area where greater focus was required.⁶² For example, the PSI provided a basis for stopping ships at sea, or inspecting them in port if they were suspected of carrying nuclear materials, technology and equipment to terrorists or states desiring to acquire nuclear weapons. According to the *Interdiction Principles for the Proliferation Security Initiative*, inspections also applied to airfields and any other facilities used as trans-shipment points. This included “such cargoes to or from states or non-state actors of proliferation concern, and to inspect vessels, aircraft, or other modes of transport reasonably suspected of carrying such cargoes, and to seize such cargoes that are identified.”⁶³

The PSI possesses great potential to help limit the trade in weapon usable nuclear material, equipment, and technology in the future and promises to be a useful addition to the nuclear nonproliferation regime. President Barack Obama strongly supports the PSI. In his April 2009

⁶⁰ According to the Bureau of International Security and Nonproliferation (Washington, DC: September 10, 2010) the PSI currently has 100 member states.

⁶¹ "Proliferation Security Initiative." U.S. Department of State. <http://www.state.gov/t/isn/c10390.htm> (accessed February 23, 2011).

⁶² *National Military Strategy to Combat Weapons of Mass Destruction*, (Washington DC: CJCS, 11 February 2002).

⁶³ "Interdiction Principles for the Proliferation Security Initiative." U.S. Department of State. <http://www.state.gov/t/isn/c27726.htm> (accessed February 23, 2011).

Prague speech, he called for the PSI to continue as an “enduring international counterproliferation effort.”⁶⁴ He has subsequently reinforced this as the formal US Government position in significant policy documents, including his 2010 National Security Strategy and Nuclear Posture Review.

Status of the Current Regime

This chapter has explored five nonproliferation efforts exerting powerful influences on the current regime. However, efforts to advance nonproliferation goals are ongoing with 2010 experiencing an eruption in nonproliferation activities. In April 2010, the US took three bold steps to strengthen the current regime. The first step was signing a new START treaty with Russia that limits the number of strategic arms on both sides and renews US and Russian leadership on nuclear issues. The second step was a gathering of world leaders at the Nuclear Security Summit in Washington to discuss the need to secure nuclear materials and prevent acts of nuclear terrorism and trafficking. Finally, the US released a new Nuclear Posture Review (NPR) that aims to reduce US dependence on nuclear weapons while strengthening the Nuclear Non-Proliferation Treaty and maintaining a strong deterrent.

The New START Treaty attempts to enhance US national security by stabilizing the strategic balance between the US and the Russian Federation at lower levels of strategic nuclear forces. Under the new START treaty, the US and Russia will be limited to significantly fewer strategic arms within seven years from the date the Treaty enters into force.⁶⁵ Each party has the flexibility to determine for itself the structure

⁶⁴ President Barack Obama, “Remarks by President Barack Obama, Prague” (speech, Prague, Czech Republic, 5 April 2009), White House Office of the Press Secretary.

⁶⁵ “Key Facts about the New START Treaty | The White House.” The White House. <http://www.whitehouse.gov/the-press-office/key-facts-about-new-start-treaty> (accessed February 26, 2011). The New START treaty was signed on April 8, 2010 in Prague by US President Barack Obama and Russian President Dmitry Medvedev. The

of its strategic forces (ICBMs, SLBMs and Strategic Bombers) within the aggregate limits of the Treaty. The Treaty establishes lower limits for US and Russian nuclear forces of 1,550 deployed strategic warheads and 700 deployed ICBMs, SLBMs, and heavy bombers equipped for nuclear armaments. It also will limit to 800 the total number of deployed and non-deployed ICBM and SLBM launchers and heavy bombers equipped for nuclear armaments.⁶⁶

US ratification of the START treaty has three important implications for the current nonproliferation regime. First, nuclear weapons reductions signal US commitment to the NPT under Article VI affirming pursuit of, “negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament.”⁶⁷ Consummating these actions renews US global leadership in nonproliferation efforts. Second, reductions also suggest the US is reducing the salience of nuclear arms in its grand strategy. Diminishing the perceived value of these weapons may affect a nuclear aspirant’s cost/benefit calculation when contemplating decisions to acquire weapons of their own. Finally, START Treaty ratification signals a general strengthening of nonproliferation norms. With reduced stockpiles, both the US and Russia can engage in the global debate surrounding nonproliferation with more credibility and thus more effectiveness.

Despite calls for continued reductions, ratification of the START Treaty was lauded by 47 world leaders at the historic 2010 Nuclear Security Summit held in Washington D.C. from 12-13 April 2010. Not since 1945, has the US hosted a gathering of so many Heads of State and

treaty was ratified in the US Senate on December 22, 2010 with it going into effect on February 5, 2011.

⁶⁶ United States Department of State. "Treaty between the United States of America and the Russian Federation." New Strategic Arms Reduction Treaty. www.state.gov/documents/organization/140035.pdf (accessed February 11, 2011).

⁶⁷ International Atomic Energy Agency. "Treaty on the Non-Proliferation of Nuclear Weapons, April 22, 1970."

Government.⁶⁸ The agenda of the summit was tightly focused around how to better safeguard weapons-grade plutonium and uranium to prevent nuclear terrorism. Goals of the summit included a common understanding of the threat posed by nuclear terrorism, agreement on effective measures to secure nuclear materials, and prevention of nuclear smuggling and terrorism.⁶⁹ Heads of State exchanged best practices on how to bolster national capacities to detect smuggled materials, recovering lost materials, identifying materials' origins and prosecution of those who trade in these materials. The summit climaxed with the 19 nations joining current international conventions, pledging resources to nonproliferation efforts, or promising to return/remove special nuclear materials under the supervision of the IAEA.⁷⁰

Although the Nuclear Security Summit primarily focused on the security of nuclear materials, it also provided a global forum to display the new US nuclear policy. The 2010 NPR, a prime national security document from which other plans and operations flow, outlined a new strategy that reduces US dependence on nuclear weapons, focuses on strengthening the NPT, and maintaining a strong deterrent.⁷¹ The release of this watershed document, one week prior to the summit, was carefully synchronized with the contents of NPR placing nuclear

⁶⁸ The Summit was the largest gathering of heads of state called by a US president since the 1945 UN Conference on International Organization. Delegations from forty-six governments plus the US attended, thirty-eight of which were represented by heads of state or government. Delegations from the European Union, the IAEA, and the UN also attended.

⁶⁹ "Key Facts about the National Security Summit | The White House." The White House. <http://www.whitehouse.gov/the-press-office/key-facts-about-national-security-summit> (accessed February 27, 2011).

⁷⁰ "Highlights of the National Commitments made at the Nuclear Security Summit | The White House." The White House. <http://www.whitehouse.gov/the-press-office/highlights-national-commitments-made-nss> (accessed February 27, 2011).

⁷¹ After months of delays, the 2010 Nuclear Posture Review (NPR) was released on April 6, 2010. Although the focus of the April 12-13 Nuclear Security Summit was on securing nuclear materials (leaving other broad topics such as nonproliferation, disarmament, and peaceful nuclear energy to different forums), synchronizing the release of the NPR with the summit provided an opportunity for the US to showcase its new nuclear strategies.

nonproliferation atop the US strategic agenda. We undertake an in-depth analysis of this document in the following chapter.

Conclusion: The Enduring Principles of Nonproliferation Regimes

This chapter demonstrated that nuclear nonproliferation norms are constructed around what countries think, say and do about nuclear weapons. These norms are codified in nuclear nonproliferation regimes. By examining the original logic and intent of five selected regimes—the Baruch Plan, Eisenhower’s Atoms for Peace Program, the NPT, proliferation technology control regime, and counterproliferation—we explored the two primary themes of this chapter.

First, investigation of these nonproliferation initiatives gives us a better understanding of what the US is doing today and why. Each initiatives benefits, shortfalls, and impacts were examined revealing that many of these regime’s strategic assumptions are still valid today. Problems of regime verification, enforcement, and a potential for cheating have plagued these regimes from their inception. To remedy these shortfalls, each subsequent initiative built on the strengths of its predecessor while attempting to shed its weaknesses. Nonetheless, much work is required to secure nuclear materials, equipment and technologies while balancing provisions to allow for the peaceful uses of nuclear technologies. It was also demonstrated that interdiction of nuclear materials alone is not a panacea. The capacity to deliver nuclear weapons by means of ballistic missiles obviously multiplies the danger presented by a nuclear weapons state. Delivery platforms and other critical nuclear technologies must also be controlled. However, all nonproliferation efforts seem to work best when executed using multilateral mechanisms. As shown through early counterproliferation attempts, unilateral actions can be perilous and risk questions of legitimacy. Understanding the genesis of these regimes and their current limitations are pivotal to our explorations in future chapters.

Second, examination of nonproliferation initiatives helps to tease out the relationships existing between these efforts, US nuclear declaratory policy, and concepts of nuclear deterrence. The logic is undemanding. Nonproliferation efforts attempt to keep a potential adversary from acquiring nuclear weapons. If you cannot prevent acquisition, then the tools of counterproliferation and consequence management become essential. Once an adversary has nuclear weapons one must formulate a strategy for deterring him from using such weapons.

Successes and failures of early nonproliferation initiatives indicate that US nuclear declaratory policies can have an effect on nuclear aspirants. Positive and negative security assurances can mollify a nation's security dilemma. These assurances may put off the desires for an organic nuclear weapons program. Additionally, horizontal proliferation adds unwanted complexity to an already delicate deterrence construct. New nuclear actors as well as varying cost/benefit computations can make the current deterrence paradigm infinitely more convoluted and dangerous. Finally, nuclear weapons states acquire credibility with non-nuclear weapons states within the nonproliferation regime when they pursue negotiations in "good faith" on nuclear disarmament. However, as the US continues to draw down its strategic forces in accordance with the new START Treaty, careful consideration must be given to the credibility of its own deterrent. The ability to provide extended deterrence and other security assurances which impede proliferation are predicated upon a robust force—one in the midst of extreme age and downsizing. Understanding these linkages will aid in the formation of future policies that are in consonance and better positioned to meet the needs of US grand strategy. It is these topics, and examination of the linkages, which occupy the interest of our next chapter.

Chapter 3

Calculated Ambiguity by Another Name?

US nuclear declaratory policy provides the backdrop for public and congressional debate on the proper role of nuclear weapons. It also shapes the discussion on the adequacy of the current nuclear arsenal, potential arms control agreements, non-proliferation efforts, and future weapon development programs. Because of these far reaching national security implications, the new declaratory policy contained in the 2010 Nuclear Posture Review (NPR) became the most contentious issue of the generation and coordination process, causing a delay of several months before its release.¹ The NPR makes two basic changes to the longstanding declaratory policy espousing the principle of “calculated ambiguity”: 1) It strengthens negative security assurances by declaring not to use or threaten to use nuclear weapons against those non-nuclear weapons states that are party to the NPT and in compliance with their nuclear nonproliferation obligations, and 2) pledges not to employ nuclear weapons to deter chemical or biological weapons attacks on the US and its allies and partners. However, these guarantees come with remarkable caveats, prompting some to question whether this new policy is simply calculated ambiguity by another name.

Is the new declaratory policy contained in the NPR consistent with historical interpretation, given the changing nuclear security environment and conclusions presented in previous chapters? Does it adequately promote President Obama’s lofty goal of achieving nuclear nonproliferation while balancing US deterrence objectives? This chapter addresses these questions through an evaluation of the current

¹ *Hearing to receive testimony on the Nuclear Posture Review: joint hearing before the US Senate Committee on Armed Services*. Washington: U.S. G.P.O., 2010, 3.

declaratory policy, contained in the NPR, in comparison to previous versions. This is done in three stages. First, we present an expected US nuclear declaratory policy given the changing nuclear security environment and previous findings. Second, we examine if declaratory policy in the 2010 NPR is consistent with historical interpretation by observing analogues and disconnects found in our expected policy. Finally, we consider whether the NPR genuinely changes the basic global message that the US sends regarding the right to use nuclear weapons. Ultimately, innovation in declaratory policy may or may not solicit desirable consequences from foreign states. Whether the NPR will do so is confronted in this and subsequent chapters.

The NPR's Declaratory Policy

The 2010 NPR is the third review of its kind since the end of the Cold War.² It is novel in the sense that, unlike its predecessors, the 2010 review is completely unclassified. This was important to the Obama administration for two primary reasons. First, an unclassified NPR would permit public discussions on the role and the future of nuclear weapons, and thus demystify an often clandestine subject.³ Second, and more germane to our discussion, the increased transparency enabled more explicit signaling of US intent and strategic thinking in regards to the legitimate use of nuclear weapons. This includes the clear articulation of US nuclear declaratory policy, the central pillar of the NPR.

At its core, the declaratory policy suggests the circumstances under which the US will consider specific nuclear options. Put another way, it signals US perceptions of the gravity of specific acts by

² The Clinton and Bush Administrations conducted two previous reviews in 1994 and 2001. Both reports remain classified.

³ "Excerpts from Obama Interview - Text - NYTimes.com." The New York Times - Breaking News, World News & Multimedia.
http://www.nytimes.com/2010/04/06/world/06armstext.html?_r=1&ref=world
(accessed March 5, 2011).

announcing those options the US might exercise.⁴ However, declaratory policy has auxiliary functions influencing four other important areas. First, it provides the intellectual background supporting classified guidance given to the DoD and explains essential details on the circumstances under which nuclear weapons might be used. This guidance is critical to nuclear planners charged with developing operational war plans, weapons-alert procedures, and, more indirectly, when developing future procurement requirements.⁵ Second, declaratory policy shapes public and legislative debate about nuclear weapons issues. The proper role of nuclear weapons, the adequacy of the current nuclear arsenal, potential arms control agreements and weapons reductions, and future arms development programs are all conducted against the backdrop of declared US nuclear doctrine.⁶ Third, it signals commitment to key allies and partners who face nuclear-armed neighbors, by outlining how the US might utilize its weapons to underwrite their security concerns. This provides the context for its final purpose, which is as an essential nonproliferation tool: Declaratory policy can influence both the likelihood and consequences of proliferation, by helping to shape global norms about reasonable and legitimate potential uses of nuclear weapons. In turn, these norms can influence internal debates, in new and potential nuclear-weapons states, about their own nuclear doctrines or plans to acquire nuclear weapons.⁷

⁴ Gompert, David, Kenneth Watman, and Dean A. Wilkening. *US Nuclear Declaratory Policy: The Question of Nuclear First Use*. (Santa Monica, Calif.: RAND, 1995) 7.

⁵ Sagan, Scott. "The Case for No First Use." *Survival* 51, no. 3 (2009): 163-182.

⁶ The Stanley Foundation. "A New Look At No First Use." Policy Dialogue Brief. www.stanleyfoundation.org/publications/pdb/NoFirstUsePDB708.pdf/ (accessed November 7, 2010) 2.

⁷ Gerson, Michael. "No First Use: The Next Step for Nuclear Policy." *International Security* 35, no. 2 (2010): 43.

The Changing Nuclear Security Environment

As discussed in chapters two and three, US policy regarding its nuclear arsenal has evolved as a result of a dynamic international environment. Most recent assessments of this environment point toward even greater complexity, arising from the establishment of a multi-polar system and the increased importance of non-state actors, both of which are likely to impact US efforts in deterrence and non-proliferation in significant ways.⁸ For example, episodes of low-intensity conflict and terrorism taking place under a nuclear umbrella could lead to an unintended escalation and broader conflict. Likewise, opportunities for mass-casualty terrorist attacks, using chemical, biological, or nuclear weapons will undoubtedly increase. As technology diffuses and nuclear power (and possibly weapons) programs expand, the potential for nuclear materials and delivery vehicle proliferation will reach unprecedented levels.

The cumulative effects of these types of changes in the nuclear security environment are potentially startling. As described in the NPR, the threat of global nuclear war has become remote, but the risk of nuclear attack has increased.⁹ This evolving threat has driven the requirement for new priorities in US nuclear policy. The NPR now places the prevention of nuclear terrorism and proliferation at the top of the US policy agenda. Maintaining strategic stability with other major nuclear powers, deterring potential adversaries, and reassuring allies still remain central elements of US strategy. However, policies are now directed at a broader range of problems, from deterring nuclear transfers to communicating attribution capabilities.¹⁰ These changing priorities have likewise stimulated a rethinking of the longstanding policy of calculated

⁸ *Global Trends 2025: A Transformed World*. (Washington, D.C.: National Intelligence Council, 2008) 3.

⁹ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) iv.

¹⁰ Bernstein, Paul I. and John F. Reichart. *The Future Nuclear Landscape*. (Ft. Belvoir: Defense Technical Information Center, 2007) 33.

ambiguity. Given these priorities and the historical legacy of US nuclear policies as observed in the previous chapters, we are led to ask: What might one expect from a current US declaratory policy that effectively balances such influences to produce a coherent strategy regarding deterrence and proliferation?

Sole-Purpose: A Prudent Balance

Before answering this question, it is instructive to re-visit briefly the findings from previous chapters. Table 1 highlights these outcomes and provides the backdrop for our conclusions:

Table 1: Deterrence and Nonproliferation Findings

Deterrence Findings Chapter 2	Nonproliferation Findings Chapter 3
1.) Nuclear weapons exist to deter attacks against the US, partners and allies.	1.) Nuclear materials transfers pose a significant global threat
2.) As long as nuclear weapons exist, the US will maintain a credible deterrent.	2.) Regime verification, enforcement, and the potential for cheating have plagued nonproliferation regimes from their inception.
3.) Nuclear weapons are primarily a political instrument although they have narrow military utility.	3. Counterproliferation capabilities become essential if nonproliferation efforts fail
4.) US conventional superiority has reduced the salience of nuclear weapons.	4.) Multilateral counterproliferation efforts tend to be more successful than bilateral efforts.
5.) Nuclear weapons have been used as a low cost substitution for conventional forces.	5.) Proliferation of WMD delivery platforms pose a significant global threat.
6.) Nuclear war plans provide freedom of action providing options to the President.	6.) If counterproliferation fails, a deterrence strategy must be tailored and formulated to the specific threat.
7.) Invulnerability of retaliatory forces is required to inflict unacceptable damage if deterrence fails.	7.) Positive and negative security assurances can aid in nonproliferation efforts.
8.) US targeting of nuclear forces attempts to avoid counter-value targets.	8.) Proliferation causes deterrence to become more fragile and complex leading to increased chances of breakdown.
9.) Calculated ambiguity is used to counter conventional superiority and asymmetric threats.	9.) Nuclear weapon state disarmament signals commitment to nonproliferation regimes.

Source: Authors own work

In an era of more diffuse WMD threats, one would expect to see a more explicit threat of nuclear response. Paramount to this effort is

communicating more directly the risks associated with WMD use against US interests. However, one would also expect a policy complimenting US nonproliferation goals. A “sole-purpose” policy, one which posits that the *only* utility of the US nuclear arsenal is to deter the use of nuclear weapons by other states, would best balance the requirements of deterrence on one hand, and nonproliferation objectives on the other.¹¹

Sole-Purpose: Strengthening US Nuclear Deterrence

Ever since President Truman’s issuance of NSC-30, the fundamental purpose of nuclear weapons has been to deter attacks against the US.¹² During the Cold War, US deterrence was buttressed by the expressed right to use nuclear weapons first in a conflict. This was primarily due to the Soviet Union possessing an overwhelming conventional advantage in Europe, which meant that the US could not hold back nuclear weapons as a last resort.¹³ Yet, the US elected not to clearly define the “red lines” which might provoke such a response. Known as “calculated ambiguity”, this policy intended to complicate the Soviet’s cost/benefit calculations with vagary, and gave the US the needed flexibility to help deter conflict by inducing caution in Soviet leaders. With the collapse of the Soviet Union, this force imbalance quickly dissipated, leaving the US as the dominant conventional power and global hegemon. However, in the absence of this imbalance, the US has continued to cling to “calculated ambiguity” as its preeminent foreign policy tool.

The US currently enjoys overwhelming dominance in the sophistication and reach of its conventionally armed forces. The crushing combat victories achieved in the First and Second Persian Gulf Wars demonstrated to the world that the ongoing “revolution in military

¹¹ Such a declaration would state that the sole purpose of nuclear weapons is to deter a nuclear attack by a potential adversary.

¹² National Security Council Memorandum 30. United States Policy on Atomic Warfare, 16 September 1948.

¹³ Smoke, Richard. *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War*. 3rd Ed. New York: McGraw-Hill, 1993, 73.

affairs”—the incorporation of high-technology weapons (including precision-guided munitions, cruise missiles, space, and stealth) into its armed forces and doctrine—has placed the US military on an altogether different plane from that of its potential rivals.¹⁴ This overwhelming dominance does not appear to be waning, with the US serving as the global leader in defense spending, surpassing the next closest country by more than eight times.¹⁵ Additionally, when combined with the United States’ closest allies, nearly three-fourths of all global defense spending is accounted for. This conventional military dominance has important consequences for US nuclear declaratory policy. It is difficult to imagine a situation in which nuclear weapons would be a serious military or political option. Given these facts, there are few credible scenarios where the US would conceivably need to retain ambiguity in its declaratory policy. Thus, present circumstances suggest that the US embrace a single-purpose nuclear deterrence strategy, exclusively based on defending against nuclear or large-scale WMD attack.

But can the US nuclear deterrent adequately dissuade a potential aggressor from chemical or biological (CBW) weapons use? According to the 2007 National Security Advisory Group, nuclear weapons are much less credible in deterring biological and chemical attacks.¹⁶ Four difficult impediments make it difficult for nuclear policy to deter chemical or biological attacks. First, nuclear targeting of CBW facilities would require exquisite intelligence. Such facilities would most likely be

¹⁴ Bunn, George, Christopher F. Chyba, and William James Perry. *US Nuclear Weapons Policy: Confronting Today's Threats*. (Stanford, Calif.: Center for International Security and Cooperation, Freeman Spogli Institute for International Studies; 2006) 313.

¹⁵ Olson, Laicie. "Center for Arms Control and Non-Proliferation: U.S. vs. Global Defense Spending." Center for Arms Control and Non-Proliferation. http://armscontrolcenter.org/policy/securityspending/articles/US_vs_Global/ (accessed March 15, 2011). US defense spending is eight times more than both Russia and China, 15 times more than Japan, 47 times more than Israel, and nearly 73 times more than Iran.

¹⁶ National Security Advisory Group, "Reducing Nuclear Threats and Preventing Nuclear Terrorism." The Belfer Center for Science and International Affairs. belfercenter.ksg.harvard.edu/files/Reducing%20Nuclear%20Threats-FINAL.pdf (accessed March 15, 2011) 10.

dispersed and perhaps collocated with non-military targets making a nuclear strike less than optimal.¹⁷ Second, the use of nuclear weapons in a retaliatory strike might unduly punish civilians rather than the perpetrators of the attack (i.e., non-state actors, national and military leadership, etc.). This can diminish legitimacy surrounding US actions resulting in international condemnation and immeasurable losses in prestige.¹⁸ Third, responding to a CBW attack with nuclear weapons may be a highly disproportionate response, if the chemical or biological attack was limited in scope.¹⁹ Threatening nuclear response to this type of attack overstates the value of CBW and can possibly lower the threshold for the use of nuclear weapons, thus creating a dangerous “commitment trap.”²⁰ Finally, CBW attacks will most likely be carried out by non-state actors.²¹ Separating those responsible from the general population will undoubtedly be a daunting task, and once accomplished, the use of nuclear weapons may not be the exacting tool required for a measured response.

A more effective solution that gives the President a wider range of credible options is to rely on a robust array of conventional strike capabilities and a strong declaratory policy. The use of conventional military force is an available option for preventing the acquisition or use of CBW by hostile state or non-state actors. Indeed, it is likely to be the

¹⁷ Experiences in acquiring intelligence around “high-value” WMD targets in Iraq, North Korea, and Iran suggests that such intelligence may often be unavailable.

¹⁸ Although the first two reasons cited are also relevant considerations when employing conventional weapons, the US may feel self-deterred to respond with nuclear capabilities. The global psychological impacts of US nuclear weapons release would need to be carefully weighed against any perceived benefit derived from US first-use. Additionally, the decision to employ nuclear weapons in this instance would need to be accompanied by quality intelligence greatly exceeding the thresholds used for conventional strikes. This is due to the scope and scale of their destructive capacities as well as their potential to cause mass collateral damage.

¹⁹ The Stanley Foundation. “A New Look At No First Use”, 5.

²⁰ If CBW deterrence fails despite the threats of nuclear use, a president will feel increased pressure to use nuclear weapons to maintain a domestic reputation and the United State’s international reputation for honoring its nuclear commitments.

²¹ *National Military Strategy to Combat Weapons of Mass Destruction*. (Washington, DC: Chairman of the Joint Chiefs of Staff, 2006) 10.

preferred option for dealing with terrorists. Alternative options to nuclear weapons might include conventional prompt global strike (CPGS). These responsive capabilities could provide the President more credible and technically suitable options for responding to a CBW attack.²² Additionally, major improvements in Ballistic Missile Defense (BMD), consequence management, and other counter-weapons of mass destruction capabilities offer ways to mitigate or impede an attack without resorting to first use. Given these other capabilities, few credible scenarios exist in which the US would benefit in retaining ambiguity in its declaratory policy; rather, the US should advance a sole-purpose policy.

Furthermore, being clear on nuclear weapons use by adopting a sole-purpose policy would add to both the credibility of the US nuclear deterrent and enhance stability in future crises. As discussed at length in Chapter 2, credibility is the product of capability plus intent to carry out an issued threat as well as whether the deterrent measure can be challenged.²³ Very few potential aggressors would question US nuclear capabilities, however, perceived uncertainty in intent by the US to carry-out nuclear threats invites potential deterrent challenges. Ideally, a deterrent measure should be certain, severe, and immediate. If not, the declared deterrent policy loses credibility.

Following this logic, a potential adversary must believe there is a reasonable chance the US would use nuclear weapons to deter conventional or CBW attacks. At this point, it is worth reiterating that political resolve, risk aversion, sensitivity to civilian casualties, and proportionality concerns make thinly veiled US nuclear threats lacking in credibility. Moreover, it is simply inconceivable that the US would exercise nuclear options when conventional alternatives exist.

²² "Conventional Prompt Global Strike." U.S. Department of State.
<http://www.state.gov/t/avc/rls/139913.htm> (accessed March 16, 2011).

²³ Schelling, Thomas C. *Arms and Influence*. (New Haven: Yale University Press, 1966) 36-39.

Conversely, a sole-purpose threat would be highly believable. A fundamental tenant of deterrence theory first articulated by Thomas Schelling, states, “the power to constrain an adversary may depend on the power to bind oneself”.²⁴ A sole-purpose policy would bind the US to tight nuclear use parameters, intimating unambiguous, severe, and immediate nuclear reprisals in response to nuclear attack. In this way, a sole-purpose policy would strengthen the US nuclear deterrent through enhanced credibility.

Finally, adoption of a sole-purpose policy would enhance stability in a crisis. If a potential adversary believes the US will retaliate to a conventional, chemical or biological attack using nuclear weapons, a crisis may be especially dangerous and unstable. Calculated ambiguity can be very risky as it may cause misinterpretation of US intentions and lead to actions that contradict its preferences.²⁵ In the absence of an explicit nuclear policy, crises could become exacerbated by the potential of a preemptive US strike designed to disarm an enemy. This possibility might prompt an opponent to take a position of high readiness, which, in turn, gives rise to the potential for increased accidents, miscalculation, dispersion of assets, and possible release of pre-delegation protocols.²⁶ Brinksmanship might emerge in this type of environment and could easily be aggravated by miscommunication, fomenting a use-it-or-lose-it mentality. Such flashpoints could be mollified by adoption of a sole-purpose policy, backing the US and potential aggressors away from the brink of first-use options during a crisis.

²⁴ Schelling, Thomas C. *The Strategy of Conflict*. (2nd ed. London: Harvard University, 1997) 22.

²⁵ *America's Strategic Posture the Final Report of the Congressional Commission on the Strategic Posture of the United States*. (Washington, D.C.: United States Institute of Peace Press, 2009) 36.

²⁶ Yeaw, Christopher. "Nuclear Signaling and Crisis Management." Lecture, Nuclear Strategic Issues from United States Naval War College, Newport, October 1, 2010.

Sole-Purpose: Strengthening the Nonproliferation Regime

As technology diffuses and nuclear power (and possibly weapons) programs expand, the potential for the proliferation of nuclear materials and delivery vehicles could easily reach historically unprecedented levels. If so, one would expect to see a declaratory policy that skillfully balances the requirements of deterrence and nonproliferation efforts. A sole-purpose policy would advance major nonproliferation efforts while enjoying the aforementioned deterrence outcomes.

Chapter three identified the US as the global leader of the nonproliferation regime. Central to this leadership role is the responsibility to bolster US strength through demonstration of its own commitments to the regime. US declaratory policy can affect this strength through adding potency to non-use norms in four demonstrable ways.

First, any threat to use nuclear weapons, except to deter nuclear use against the US or its allies, risks undermining US leadership and integrity of the regime. Legitimizing the potential use of nuclear weapons with a policy of calculated ambiguity makes nonproliferation efforts ring hollow and helps erode the essential cooperation necessary to avoid proliferation.²⁷ By adopting a sole-purpose policy, the US can seize the moral high ground, and garner important political benefits in its effort to lead the nonproliferation regime. These benefits would include increased support from non-nuclear weapons states—including countries with the capability to produce CBW—to implement and take more active roles in global nonproliferation efforts.²⁸

²⁷ Shultz, George P., William J. Perry, and Henry A. Kissinger. "Shultz, Perry, Kissinger, Nunn: Deterrence in the Age of Nuclear Proliferation - WSJ.com." Business News & Financial News - The Wall Street Journal - Wsj.com. <http://online.wsj.com/article/SB10001424052748703300904576178760530169414.html> (accessed March 8, 2011).

²⁸ Jean du Preez, "The Impact of the Nuclear Posture Review on the International Nuclear Nonproliferation Regime." *Nonproliferation Review*, Fall–Winter 2002: 78.

Second, adoption of a sole-purpose policy would send powerful signals regarding the US commitment to the NPT. As discussed in the previous chapter, the five declared nuclear weapon states have a legal obligation in accordance with Article VI "to negotiate in good faith the cessation of the nuclear arms race and nuclear disarmament."²⁹ Rather than simple reductions in strategic weapons, reducing the salience of nuclear weapons in politico-military planning is a clear and convincing demonstration to US disarmament commitments.³⁰ Furthermore, since declaratory policy helps shape the intellectual atmosphere in which war plans are created, a sole-purpose policy could constructively influence force structure decisions which favor increased arms control and nonproliferation initiatives.

Third, adoption of a sole-purpose policy has the potential to reduce the perception of prestige and influence imparted by the possession of nuclear weapons, thus reducing a prime motivation of nuclear aspirants. By retaining the policy of calculated ambiguity, the world's most affluent and powerful nation, signals that it continues to believe that nuclear weapons are important instruments of national power. This perception contributes to international claims of US nuclear hypocrisy, as it seeks to retain its nuclear weapons yet lead the NPT regime to prevent others from acquiring them.³¹ Additionally, this same perceived prestige value may have highly undesirable effects. While contemplating acquisition of nuclear capabilities, a nation's cost/benefit calculation can be tipped by perceived prestige and influence factors.³² By strengthening non-use norms through the adoption of a sole-purpose policy, the US can more

²⁹ "Nuclear Non-Proliferation Treaty [NPT]." Federation of American Scientists. <http://www.fas.org/nuke/control/npt/> (accessed February 19, 2011).

³⁰ Choubey, Deepti. *Are New Nuclear Bargains Attainable?* (Washington, DC: Carnegie Endowment for International Peace, 2008) 7.

³¹ Gerson, "No First Use: The Next Step for Nuclear Policy." 35.

³² Russell, James, and Daniel Moran. *Extended Deterrence, Security Guarantees, and Nuclear Proliferation: Strategic Stability in the Gulf Region*. (Ft. Belvoir: Defense Technical Information Center, 2009) 13.

credibly persuade those seeking nuclear weapons of their reduced value in international relations.

Finally, adoption of a sole-purpose policy could mitigate a common pretext used by proliferators and nuclear aspirants to pursue nuclear capabilities. Inherent in the policy of calculated ambiguity is the US retention of the right to nuclear first-use. To nations non-aligned with the US and its allies, the resulting security dilemma produced by this declaration can drive powerful nuclear imperatives.³³ Declaring that the US reserves the right of first use against non-nuclear states gives added weight to these nations' internal decisions to pursue organic nuclear weapons programs. To avoid US nuclear coercion, a nation may feel compelled to develop a nuclear weapons program, regardless of the international and domestic costs. A sole-purpose policy would ease such concerns, and remove an alleged reason for nuclear ambitions. In removal of this justification, the nonproliferation regime could operate more credibly against nations in the absence of nuclear hypocrisy.

In conclusion, a sole-purpose policy, or one which holds that the *only* utility of the US nuclear arsenal is to deter the use of nuclear weapons by other states, best balances the requirements of deterrence, on the one hand, and nonproliferation objectives on the other. In an era where "the threat of global nuclear war has become remote, but the risk of nuclear attack has increased," one would expect to see a more explicit position concerning a US nuclear response. A sole-purpose nuclear deterrent force merged with overwhelming conventional capabilities increases both the credibility of US threats as well as enhances stability in crisis. While strengthening deterrence, a sole-purpose policy would also vastly enhance US nonproliferation efforts. This policy would increase US legitimacy as the leader of the nonproliferation regime,

³³ "NTI: Global Security Newswire - Iran Rails at New U.S. Nuclear Strategy." NTI - Global Security Newswire. http://gsn.nti.org/gsn/nw_20100412_5761.php (accessed March 17, 2011).

bolster the current non-use culture, and smooth the way to President Obama's goal of a world without nuclear weapons.

Despite the advantages reaped by adoption of a sole-purpose policy, the 2010 NPR takes a slightly different approach to US nuclear declaratory policy. In the subsequent sections, we will delve into this policy, and test its consistency with historical interpretation, by observing analogues and disconnects found between it and the utility of the sole-purpose approach.

2010 NPR: Lead but Hedge

In a speech in Prague on April 5, 2009, President Obama vowed, "the US will seek the peace and security of a world without nuclear weapons," and, "To put an end to Cold War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same."³⁴ With this pledge, many anticipated new innovations in declaratory policy casting out legacy-based notions regarding calculated ambiguity. This section briefly examines the language contained in the NPR, as a prelude to the next section, which considers whether US declaratory policy has really changed the basic message the US sends globally regarding the right to use nuclear weapons.

In the 2010 NPR, the DOD strikes a deliberate balance between leading the way to a safer world and hedging against the unexpected. The NPR states, "The *fundamental* role of US nuclear weapons, which will continue as long as nuclear weapons exist, is to deter a nuclear attack on the US, our allies, and partners."³⁵ However, as in previous reviews, the 2010 NPR does not contend that the *only* role for nuclear weapons is

³⁴ President Barack Obama, "Remarks by President Barack Obama, Prague" (speech, Prague, Czech Republic, 5 April 2009), White House Office of the Press Secretary.

³⁵ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) 15.

nuclear deterrence, language which will be discussed in subsequent sections.

One novelty of the current review is that it attempts to strengthen longstanding negative security assurances. It does so by expanding the previous pledge that, “The US will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the Nuclear Non-Proliferation Treaty (NPT).” To this, the current review adds that, to garner these assurances, nations must be, “in compliance with their nuclear non-proliferation obligations.”³⁶ This revised assurance is intended to underscore the security benefits of adhering to and fully complying with the NPT. It also seeks to persuade non-nuclear weapon states that are party to the Treaty to work with the US and other interested parties, to adopt effective measures to strengthen the nonproliferation regime. Yet, the US retains the right to determine unilaterally the conditions which define “compliance” and which would activate its nuclear trigger.³⁷ Thus, the language contained in the NPR deliberately leaves open the option for the US to use nuclear weapons to launch preemptive or preventative first strikes, if required.

Equally important, the NPR establishes for any state eligible for the aforementioned nuclear assurance that, “uses chemical or biological weapons against the US or its allies and partners would face the prospect of a devastating conventional military response.”³⁸ This new language represents perhaps the greatest departure from previous declarations. In both the 1994 and 2001 reviews, nuclear weapons played a vital role in deterring CBW threats.³⁹ Together, they explicitly articulated that a

³⁶ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) 15.

³⁷ Walt, Stephen. "Pros and Cons in the Nuclear Posture Review" Foreign Policy. http://walt.foreignpolicy.com/posts/2010/04/06/nuclear_posture_review_or_nuclear_public_relations (accessed March 21, 2011).

³⁸ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) 16.

³⁹ Rumsfeld, Donald. "Annual Defense Report to the President and the Congress." DefenseLink. <http://www.dod.mil/execsec/adr2002/index.htm> (accessed March 21, 2011) 86.

critical function of US nuclear weapons was to dissuade potential adversaries from developing and using nuclear, biological, chemical, or conventional weapons. Under these policies, the use of CBW would cross a pre-determined threshold that would trigger a likely nuclear retaliation. The new NPR softens this language and intimates a perpetrator would face a conventional response only in response to a CBW attack. However, despite this new assurance found in the NPR, an escape clause exists, allowing the US to continue to threaten first use, and if necessary, to respond to a variety of non-nuclear contingencies using the US nuclear arsenal. With caveats such as, “The US reserves the right to make any adjustment that is warranted by the evolution and proliferation of the biological weapons threat and US capacities to counter that threat”, the US changes its policy very little from the past. Much of the imprecision in declaratory language, characterized by previous policies, remains.

Although the new statement lowers the priority given to nuclear weapons in US strategic thinking, ultimately, the NPR fails to clearly specify the circumstances under which the US might use nuclear weapons. By stipulating that nuclear weapons would be used in “extreme circumstances” to protect “vital interests”, it has retained much of the vagueness that was the hallmark of calculated ambiguity.⁴⁰ This “Lead but Hedge” approach is best exemplified by the NPR’s statement, “there remains a narrow range of contingencies in which US nuclear weapons may still play a role in deterring a conventional or CBW attack”.⁴¹ Under the umbrella of this caveat, the US can still threaten the first use of nuclear weapons in a variety of circumstances.

Due to the uncertainty inherent in the nuclear security environment, the NPR concluded that current conditions make it impossible to adopt “safely” a sole-purpose policy. However, what are

⁴⁰ Gerson, “No First Use: The Next Step for Nuclear Policy.” 8.

⁴¹ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) 16.

these conditions? What are the narrow ranges of contingencies to which the NPR alludes and under what circumstances does continuation of calculated ambiguity remain valuable? The next section explores these questions and attempts to evaluate their consistency with historical interpretation.

Narrowing the Circumstances for Nuclear Use

Declaratory policy became one of the most debated issues of the NPR generation process and a primary reason for its delayed release.⁴² Two camps dominated the debate. On the one hand were those who wanted to utilize declaratory policy as a means to fulfill the President's vision set out in Prague. These advocates campaigned for a "no first use" or sole-purpose policy valuing it as an underutilized tool in the fight against proliferation.⁴³ On the other hand were those in the administration advocating for maximum flexibility in nuclear policy. These backers desired adherence to the longstanding policy of calculated ambiguity to hedge against an uncertain future security environment.⁴⁴ Although the administration considered several differing approaches to declaratory policy, the NPR ultimately concluded that, "The US is not prepared at the present time to adopt a universal policy of sole purpose...but will work to establish conditions under which such a policy could be safely adopted".⁴⁵

Despite evidence that sole-purpose security assurances can aid in nonproliferation efforts, the new policy changes little from the past to

⁴² Sanger, David E. "White House Is Rethinking Nuclear Policy - NYTimes.com." The New York Times - Breaking News, World News & Multimedia. http://www.nytimes.com/2010/03/01/us/politics/01nuke.html?_r=1 (accessed March 21, 2011). .

⁴³ Bernstein, *The Future Nuclear Landscape*. 33.

⁴⁴ *America's Strategic Posture the Final Report of the Congressional Commission on the Strategic Posture of the United States*. (Washington, D.C.: United States Institute of Peace Press, 2009) 36.

⁴⁵ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) 16.

affect the administration's top policy objective.⁴⁶ Nevertheless, three security dilemma aid in propagating the policy of calculated ambiguity and generating the disconnects observed in our expected policy: The threat of biological weapon (BW) attacks, nuclear weapon state transfer of WMD to transnational terrorists, and allies' apprehension concerning a more explicit policy. In the administration's estimation, calculated ambiguity remains the preeminent tool for satisfying the broadest range of nuclear problems, while increasing the President's options for action. We will now examine each of the conditions that the NPR claims impede adoption of a sole-purpose policy.

The Threat of Biological Weapons (BW) Attacks

The amount of destruction brought about by a biological attack could easily match that of a high-yield nuclear bomb. A nuclear attack in an urban area could produce hundreds of thousands of casualties;⁴⁷ similarly, a BW attack, in theory, could produce comparable or even greater numbers of fatalities.⁴⁸ Furthermore, the economic damage done by a BW attack could be staggering, decimating both local and national economic institutions. In addition to mass casualties, such an attack could render large amounts of urban infrastructure or agricultural resources useless. By forcing expensive decontamination or even destruction of affected facilities, a BW attack could deal a momentous blow to US economic power and national security.⁴⁹ By being just as devastating as a nuclear strike, a BW, therefore, ought to elicit a similar

⁴⁶ For the first time, both the 2010 National Security Strategy and 2010 Nuclear Posture Review place nuclear proliferation priority atop the US strategic agenda.

⁴⁷ Depending on the weapon's yield and placement, it could of course produce many more casualties. However, in President Obama's April 5, 2009 Prague speech he stated, "One nuclear weapon exploded in one city—be it New York or Moscow, Islamabad or Mumbai, Tokyo or Tel Aviv, Paris or Prague—could kill hundreds of thousands of people. And no matter where it happens, there is no end to what the consequences might be—for our global safety, our security, our society, our economy, to our ultimate survival."

⁴⁸ The Stanley Foundation. "A New Look At No First Use", 6. Perversely, a BW attack in the same area could produce anywhere from zero to millions of casualties.

⁴⁹ *National Strategy for Countering Biological Threats*. (Washington, D.C.: National Security Council, 2009) 2.

response by the US. Proponents of calculated ambiguity conceive that in the absence of reciprocal weapons, it is not difficult to imagine circumstances under which a US president might require a nuclear option.⁵⁰ To halt a future attack or respond to an imminent BW attack by a hostile state or non-state actor, some deem the use of nuclear weapons as a viable choice.

Proponents believe that preserving vagueness regarding a possible US nuclear response to BW attacks could also have a desirable BW nonproliferation benefit. In their estimation, many adversaries might be discouraged from using or even acquiring BW to offset US conventional superiority if they perceived the benefits outweigh the risk of nuclear retaliation.⁵¹ Additionally, proponents posit that if US allies lose confidence in its willingness and ability to protect them from BW attacks, they may choose to develop their own WMD capabilities to counter this menace. Until the US possesses an operational and highly reliable non-nuclear prompt global strike capability, they conjecture that conditions will not exist to adopt a more explicit declaratory policy.⁵² Pending this capability, many believe that nuclear weapons remain the weapon *par-excellence* to deter, and if necessary, respond to BW attacks and avoid coercion after a debilitating BW assault. Mitigation of this capability gap is expressed in the NPR through the creation of an escape clause recognizing, "The US reserves the right to make any adjustment in the

⁵⁰ The US eschews the use of biological weapons in warfare. In 1972, it signed the Biological and Toxic Weapons Convention, which banned the "development, production and stockpiling of microbes or their poisonous products except in amounts necessary for protective and peaceful research."

⁵¹ Soloksky, Richard. "Demystifying the Nuclear Posture Review." *Survival* 44, no. 3 (2002): 133-148.

⁵² The DOD is studying CPGS within the context of its portfolio of all non-nuclear long-range strike capabilities including land-based and sea-based systems, as well as standoff and/or penetrating bombers. This analysis will be concluded in summer 2010, with investment recommendations reflected in the Fiscal Year 2012 budget submission.

assurance that is warranted by the evolution and proliferation of the biological weapons threat and US capacities to counter that threat.”⁵³

Ultimately the unquantifiable threats posed by BW warrant prudent consideration regarding the role of nuclear weapons in response to their use. Ambiguity surrounding the potential effects of these types of attacks necessitates caution in removing nuclear weapons as a viable option available to the president. However, as previously addressed, there are exceedingly few plausible scenarios where the US would need to use nuclear weapons in light of its overwhelming conventional capabilities—both prompt and with global reach. Additionally, the problems associated with intelligence shortfalls, the non-discriminating nature of nuclear weapons, proportionality concerns, and attribution problems make nuclear use in response to a BW attack incredible. Furthermore, increasingly sophisticated and effective consequence management capabilities diminish the benefits of such an attack while imposing unacceptable costs to a perpetrator. All of these factors serve to negate the need to retain ambiguity in declaratory policy and gives credence to the efficacy of a sole-use policy.

Allies’ Apprehension

The maintenance of US nuclear “extended deterrence” commitments to key allies who face nuclear neighbors, is a both a central security interest for the US and an essential non-proliferation tool.⁵⁴ Any declaratory policy alternative must preserve assurances and be achieved with appropriate consultation with affected allies. If not, acute security dilemmas may begin to fester generating an imperative for an organic nuclear weapons capability.

⁵³ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) 16.

⁵⁴ Payne, Keith B. *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century*. (Jessup, MD: National Institute Press, 2008) 24-29. According to Payne, successful extended deterrence required at least three components: adequate military capability, resolve to act in specified circumstances, and communication of that resolve to allies and potential adversaries.

Security guarantees are an extremely sensitive subject for key allies who have genuine concerns. As such, some allies argue that a sole-purpose policy might be ineffective in providing extended deterrence.⁵⁵ Proponents of calculated ambiguity posit that removing the US threat of a first use nuclear option, aggressors who would otherwise give pause may be more willing to gamble on US restraint. This becomes especially problematic for allies who are concerned with the threat of CBW or massive conventional attacks by very capable neighbors. US conventional guarantees, underwritten by a sole-purpose policy, might fight devastating wars on an allies' territory after hostilities had begun; a nuclear guarantee poses an existential threat to an enemy's territory, thus making it less likely that hostilities ever begin.⁵⁶ In this way, a sole-purpose policy may impart the perception of a diminished US commitment to allies' security.

Proponents of calculated ambiguity also hypothesize that if the US were to narrow the circumstances in which nuclear first use was considered, allies may be encouraged to develop their own nuclear capabilities.⁵⁷ To mollify their respective security dilemmas, some allies could "go nuclear" rapidly (i.e., Japan, South Korea, Saudi Arabia, Turkey et al). These conditions could have deleterious effects by triggering regional arms races, and leading to unprecedented conventional and nuclear militarization.⁵⁸ Proponents also believe this could lead states to develop undesirable security arrangements with external powers, adding unwanted complexity to an already delicate deterrence construct. Furthermore, new nuclear actors as well as

⁵⁵ Cimbala, Stephen. "Nuclear First Use: Prudence or Peril." *Joint Forces Quarterly* 4th Quarter, no. 51 (2008): 27-36.

⁵⁶ Russell, *Extended Deterrence, Security Guarantees, and Nuclear Proliferation: Strategic Stability in the Gulf Region*, 2.

⁵⁷ If sole-purpose was adopted as US nuclear declaratory policy, it would signal to both adversaries and allies that annihilating nuclear attacks are the only threshold they would have to cross to risk US nuclear retaliation.

⁵⁸ *Global Trends 2025: A Transformed World*, ix.

varying cost/benefit computations could make the current deterrence paradigm infinitely more convoluted and dangerous.

Reconciling differing national perspectives on nuclear deterrence is challenging, to be sure, but not insurmountable. The US and its allies, working in consonance together, can develop changes to extended deterrence that facilitates adoption of a sole-purpose policy. Through unprecedented levels of coordination and consultation during the policy drafting process, both the US and allies' can allay mutual security concerns through both nuclear and non-nuclear assurances. Deepened consultations enabling synergistic policies and postures will go far in credibly deterring aggression through better integration and interoperability. With a better understanding of US concepts of extended deterrence and nonproliferation objectives, allies and partners will be well positioned to implement these shared goals.

Ultimately, it is not what the US thinks, but what its allies think.⁵⁹ If the US cannot reassure allies under its security umbrella, powerful incentives may spur proliferation or drive allies to seek other relationships that fulfill their security needs. Before adoption of a sole-purpose policy, allies must believe commitments to defend them will be maintained and honored.⁶⁰ This may require major obligations in Ballistic Missile Defense (BMD), consequence management, and other counter-weapons of mass destruction capabilities. Thus, with the existence of credible conventional and nuclear assurances, the US can offer ways to mitigate or impede an attack without resorting to first use pledges and therefore adopt a sole-purpose policy.

Nuclear Weapons State Transfer of WMD to Transnational Terrorists

The threat of nuclear first-use against terrorists with WMD or states that harbor them is hardly likely to dissuade terrorists, although it

⁵⁹ Kulacki, Gregory. *Japan and America's Nuclear Posture*. (Cambridge, MA: Union of Concerned Scientists Global Security Program, 2010) 1.

⁶⁰ Sagan, Scott. "The Case for No First Use." *Survival* 51, no. 3 (2009): 164.

may inhibit other states from providing comparable support to dangerous malcontents.⁶¹ By utilizing nuclear declaratory policy, the US can indirectly influence the likelihood of nuclear terrorism by dissuading these governments or individuals by clearly assigning responsibility for their surrogate's actions.

Nations which are unable to challenge the US directly look for asymmetric opportunities to meet their foreign policy objectives. One possible course of action is to support transnational terrorist organizations that closely share their aims. This is an appealing option since surrogates transcend the nation-state construct and frustrate traditional states' attempts to attribute an attack or deliver prompt and proportionate retribution.⁶² To send a clear signal of intent, President Obama has seized the language used by his predecessor, stating, "Nations transferring nuclear arms to terrorists will be held fully accountable for the consequences of such action."⁶³

Directed at nuclear aspirants such as Iran and known proliferators like North Korea, this statement warns those who have often used surrogates as a substitute for direct force against the US and its allies. Proponents of calculated ambiguity argue that retaining a degree of uncertainty in the mind of those who would proliferate nuclear technology and materials, about just how the US will respond, can produce positive deterrent effects. By reminding potential proliferators of the risks and consequences of surrogate use, the US can reinforce restraint and caution surrounding nuclear transfers.

However, nations considering these transfers will be extremely wary of US attribution capabilities and will fear not only the potential for

⁶¹ Cimbala, "Nuclear First Use: Prudence or Peril." 36.

⁶² Salehyan, Idean. *Rebels without Borders: Transnational Insurgencies in World Politics*. (Ithaca, N.Y.: Cornell University Press, 2009) 9.

⁶³ Sanger, David E. "Obama Limits When U.S. Would Use Nuclear Arms - NYTimes.com." The New York Times - Breaking News, World News & Multimedia. http://www.nytimes.com/2010/04/06/world/06arms.html?_r=1&pagewanted=all (accessed March 16, 2011).

a nuclear but also a conventional US reprisal. One factor dictating the amount of caution a proliferating state will exercise depends on how unambiguously the US signals that nuclear terrorist acts committed with transferred weapons or fissile material will eventuate in an appropriately ruinous nuclear response by the US.⁶⁴ A sole-purpose policy, explicitly linking nuclear retaliation to the consequences of surrogate use is a powerful reminder of the risks of such actions. By removing any ambiguity surrounding the US response to an attributed nuclear transfer, nations engaging in these behaviors will clearly understand they face an existential threat if caught. These factors give credence to the efficacy of a sole-use policy, over one of ambiguity, for deterring nuclear weapons state transfer of WMD to transnational terrorists.

Implications

As previously established, much of the imprecision and vagueness intrinsic to earlier policies are also present 2010 NPR's "lead but Hedge" strategy. Although the NPR takes positive steps towards US nonproliferation goals by attempting to reduce the role of nuclear weapons in strategic thinking, it may have effects that are counterproductive. First, the "revocation clause" contained in the declaratory policy language may cause added instability in a crisis and dilute nonproliferation efforts. Second, the overwhelming conventional power wielded by the US and its allies may cause nuclear aspirants to redouble their efforts in obtaining weapons off their own. Finally, we ask: Can conventional capabilities really fill the first-use role that nuclear weapons have traditionally played? These important implications are considered here.

Captured in nearly every national security document is the undertone that the US will never be able to exactly forecast the future

⁶⁴ Muthiah Alagappa. *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*. (Stanford, Calif.: Stanford University Press, 2008), 354.

security environment. The 2010 NPR remains true to this axiom when it employs the language intimating that nuclear weapons would be used in “extreme circumstances” to protect “vital interests” while in the same breath positing that the US “reserves the right to make any adjustment in the assurance”. However, this middle-of-the-road approach can have hidden consequences working in dissonance with US stated objectives.

Declaratory policy will never be able to adequately cover every conceivable scenario. Sometimes it must be expressed in the midst of crisis. A case in point is the letter provided by Secretary of State James Baker to Iraqi Foreign Minister Tariq Aziz in 1990 clarifying the commitment of the United States to react “strongly” if Iraq crossed certain red lines.⁶⁵ This alternate form of declaring nuclear intentions is what we will call the “revocation clause”. As previously discussed, this form of signaling can have unwanted ramifications on crisis stability and can be seen as highly threatening and escalatory. However, there may be other costs involved with revoking nuclear security assurances, specifically with regard to the nonproliferation regime. In an era of more diffuse WMD threats, it is imperative nuclear declarations be both consistent and believable. If capriciously applied or routinely altered, non-nuclear weapons states may begin to believe that foregoing nuclear weapons may run contrary to their own long-term national security interests. Avoiding coercion by fickle nuclear states may only be possible with the possession of countervailing nuclear capabilities. Thus, it is

⁶⁵ *America's Strategic Posture the Final Report of the Congressional Commission on the Strategic Posture of the United States*. (Washington, D.C.: United States Institute of Peace Press, 2009) 35. On the eve of Operation Desert Storm in January 1991, then-Secretary of State James Baker traveled to Geneva to meet with Iraqi Foreign Secretary Tariq Aziz to convey to the Iraqis that any use of weapons of mass destruction (WMD) against coalition forces would be met with an overwhelming response. It was widely assumed within the Iraqi National command Authority that this meant that the US would retaliate with nuclear weapons if Iraq used chemical or biological weapons against the coalition.

important that declaratory policy not include dangerous rhetoric to achieve short-term operational success at the expense of longer-term nonproliferation objectives.

Second, the same overwhelming conventional dominance the US uses to untether itself from its nuclear arsenal may compel adversaries to pursue “asymmetric” responses.⁶⁶ The crushing combat victories achieved by the sophistication and reach of its conventional armed forces have placed the US military on an altogether different plane from that of its potential rivals. To insure against technological surprise by a conventionally superior US, a non-aligned nation may feel obliged to aggressively pursue nuclear and CBW as a hedge against coercion. In fact, over the last 20 years, the arsenals of the declared nuclear weapons states (excluding China) have shrunk, while the number of countries developing nuclear and other weapons of mass destruction, in violation of their commitments to the Non-Proliferation Treaty, the Chemical Weapons Convention and the Biological Weapons Convention, has increased.⁶⁷ This paradox has important implications which will be explored in the next chapter.

Finally, before discarding a first-use doctrine as an anachronism supplanted by overwhelming US conventional superiority, one must ask: Can conventional capabilities really fill the first-use role nuclear weapons have traditionally played? Despite current US power projection capabilities, questions have arisen over the long-term sustainability of US conventional force imbalances.⁶⁸ With current US involvement in two “long wars” and engagement in military operations spanning the globe, what if another major conflict arose? Given this backdrop, would the US have enough conventional power to deter a North Korean invasion of

⁶⁶ Bunn, *Nuclear Weapons Policy: Confronting Today's Threats*. 314.

⁶⁷ Soloksky, "Demystifying the Nuclear Posture Review." 136. Soloksky contends that, contrary popular view, America's overwhelming conventional superiority has been a more important factor than its nuclear capabilities in encouraging hostile states to acquire WMD capabilities.

⁶⁸ The Stanley Foundation. "A New Look At No First Use", 4.

South Korea? Could US forces fight their way to Tehran if needed? The US has demonstrated it can deploy overwhelming conventional power to certain locations, but it relies heavily on air and sea forces, which have limited range and availability.

These issues become exacerbated by a sputtering US economy which threatens the requisite resourcing required for an enhanced conventional role. According to top administration officials, an underperforming economy is the principal US national security threat.⁶⁹ Because of US economic frailty, the three-way struggle over priorities (protection, consumption, and investment) becomes more pronounced, posing a profound dilemma for the US.⁷⁰ Ultimately, if the US neglects to pay the appropriate costs associated with the expanded role of conventional forces, perceived external weakness will inevitably invite deterrent challenges. The implications of this conundrum are clear: If not properly resourced, an erosion of conventional capabilities coupled with a reduction in the salience of nuclear weapons can have staggering effects on US deterrence and nonproliferation objectives. This weakening of US deterrence creates conditions necessary for increased probability of future conflict.

Finally, several notable scenarios seemingly uncovered by the current US declaratory policy warrants attention. US responses to catastrophic cyber and nonlethal threats (Space and EMP) are becoming more probable as technologies to mount such attacks become more

⁶⁹ "Mullen: Debt is top national security threat - CNN.com." CNN.com International - Breaking, World, Business, Sports, Entertainment and Video News. <http://edition.cnn.com/2010/US/08/27/debt.security.mullen/index.html> (accessed March 23, 2011).

⁷⁰ Gilpin, Robert. *War and Change in World Politics*. (Cambridge: Cambridge University Press, 1981) 167. Gilpin posits, if the US suppresses consumption, the consequence can be severe internal social tensions and political ramifications. If the US neglects to pay the costs of defense, external weakness will inevitably lead to its defeat by rising powers. If the US fails to save and reinvest a sufficient fraction of its surplus wealth in industry and agriculture, the economic basis of the society and its capacity to sustain either consumption or protection will decline.

diffused. Cyber attacks, like biological ones, can range from nuisance value to mass casualty (i.e., kinetic attack against power and gas infrastructure at the height of winter). Likewise, space and EMP attacks can severely cripple military and civilian infrastructure with effects comparable to that of WMD use. Because of these far reaching consequences, future declaratory policy should make provisions for the possibilities of these circumstances and constitutes an area of further policy deliberation.

Conclusion

Nuclear declaratory policy is a signal of US intent and strategic thinking in regard to the legitimate use of nuclear weapons. As such, it plays an essential role in both reinforcing deterrence and affecting its nonproliferation objectives. The declaratory policy contained in the 2010 NPR is a chameleon, retaining calculated ambiguity at its core, but intimating a reduced salience of nuclear weapons in US military policy. In this limited way, the NPR advances President Obama's commitment to "seek peace and security in a world without nuclear weapons". However, from a purely strategic perspective, the new declaratory policy changes little from previous statements and the long nuclear history of the US.

In today's nuclear security environment, one would expect to see a more explicit threat of nuclear response. In an era of diffuse WMD threats, it would appear necessary to communicate more directly the risks and consequences associated with WMD use against US interests. A sole-purpose policy adopted by the US would seem best to balance the requirements of deterrence, on the one hand, and the administration's top priority of nonproliferation on the other. However, as the NPR states, "conditions are not right to safely adopt a sole-purpose policy". Three vexing issues—BW attacks, nuclear weapon state transfers of WMD to transnational terrorists, and allies' apprehension to adopt a more explicit policy—continue to confound US policy makers in creation of a

consistent and credible nuclear strategy. Yet, leaving calculated ambiguity as the centerpiece of US declaratory policy portends significant hazards. As demonstrated, such a policy can be very risky in a proliferating world. It may cause dangerous misinterpretation of US intentions leading to actions that contradict US preferences, to include, incentives for nations to pursue a nuclear weapons capability and engage in adventurous behaviors.

To this end, the ultimate goal of a coherent US nuclear policy is to enhance its national security while simultaneously creating global strategic stability. Such a well-crafted policy attempts to elicit desirable responses from its target audiences, if it does not, revision is required. The next chapter looks to this question and attempts to discern where exactly the current US nuclear declaratory policy has affected international behaviors in the realms of deterrence and non-proliferation.

Chapter 4

Shaping Global Nuclear Logic

Thus far, this study has attempted to provide the historical and theoretical underpinnings used to explicitly link US deterrence objectives with progress on its nuclear nonproliferation efforts. At the nexus of these twin objectives is US nuclear declaratory policy, an underutilized instrument requiring systematic thought. Previously, we noted that in an era of more salient WMD threats, one would expect to see a more explicit threat of nuclear response—specifically a sole-purpose policy. Nonetheless, “Lead-but-Hedge” emerged as US policy makers’ preference to tackle the unknowns inherent in the nuclear security environment. But to what degree has the recent change in declaratory policy been successful in achieving the aforementioned objectives?

A well-crafted policy elicits desirable responses from its target audience. If it does not, revision is required. This chapter appraises several responses by exploring the effects and strategic consequences of “Lead-but-Hedge” on the nuclear logic of US allies, competitors, and rivals. By using a framework of brief case studies in light of the findings of previous chapters, we examine the nuclear decision-making processes of three important US nuclear policy targets—Japan, India, and Iran.

Each case describes the sequence of events that contextualizes the unique nature of each dilemma, and illuminates relevant factors driving their nuclear decisions. We undertake an assessment of “Lead-but-Hedge” by observing any national apprehension caused by the policy as well as its propensity to effect either horizontal or vertical proliferation. We then evaluate these impacts for their moderating or aggravating influences on the overarching US goals of deterrence and nonproliferation. Finally, these influences are examined with respect to

potential implications for future policy formulation with regard to comparable allies, competitors and rivals.

The Nuclear Security Environment: A Competitive Arena

The nuclear logic of nations is best explained by examining the similarities among them and the identical conditions they face in the nuclear security environment. Nations decide to pursue or not to pursue nuclear weapons for a variety of reasons, but all are alike, insofar as they desire to remain autonomous sovereign states. They may or may not seek to increase their power and prestige, but all avoid attempts at being subsumed into some larger political entity, or to be made smaller.¹ This struggle for state survival is the inherent condition of international relations. Nations also share at least one important condition—anarchy, the absence of a world sovereign.² As long as technology, geography, and economy make it possible for nations to use force against one another, nations will exhibit apprehension and mistrust towards each other. Additionally, because there is no international authority to protect those nations satisfied with the status quo or to punish those who violate it, nations must look to their own devices to ensure their survival—this is the essence of the security dilemma.³ Ultimately, all steps taken to mitigate this sense of insecurity are part of a nation's grand strategy.

Because of the unparalleled destructive power of nuclear weapons, nations that brandish them amplify the concern of neighboring or rival states; hence, watched very carefully. Owing to dual-uses of peaceful

¹ Barry Posen. *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars*. (Ithaca: Cornell University Press, 1984), 16.

² Kenneth Neal Waltz. *Theory of International Politics*. (Reading, Mass.: Addison-Wesley Pub. Co., 1979), 88.

³ Robert Gilpin. *War and Change in World Politics*. (Cambridge: Cambridge University Press, 1981), 94. Gilpin posits that each nation's highest concern is about being attacked or dominated by other nations. Therefore, each nation will strive to enhance its own security by acquiring more and more power for itself. Although it can never attain complete security in a world of competing groups, by seeking to enhance its own power and security, it necessarily increases the insecurity of others and stimulates competition for security and power.

nuclear technologies, concealment of a nuclear weapons program can be easy to disguise. Exacerbating this dangerous condition is a nation's difficulty in discerning the political intentions driving its neighbor's nuclear aspirations. This being the case, nations tend to be very perceptive to changes in military doctrine and military capabilities, especially nuclear ones. Thus, US allies, such as Japan, who enjoy the benefits of an extended nuclear deterrent, are hypersensitive to both US and regional neighbors' changes in nuclear policy.

Japan: An Allies' View of "Lead-but-Hedge"

Japan is the United States' strongest ally in Asia. President Obama declared that "the US-Japan alliance [is] a cornerstone of world peace and security."⁴ Within the international arena, states serve their interests by pooling their resources through alliances. An ally is an international role structure within which states expect each other to observe two simple rules: (1) disputes will be settled without war or the threat of war (the rule of non-violence); and (2) they will fight as a team if the security of any one is threatened by a third party (the rule of mutual aid).⁵ For the US and Japan, these rules were codified by the *Treaty of Mutual Cooperation and Security between the United States of America and Japan*, entering into force on 23 June 1960. Ever since then, the US-Japan relationship has been crucial to Asian stability and to US and

⁴ "Obama says US-Japan alliance a 'cornerstone' of world peace and security - FoxNews.com." FoxNews.com - Breaking News | Latest News | Current News. <http://www.foxnews.com/world/2010/09/23/obama-says-japan-alliance-cornerstone-world-peace-security-1775168012/> (accessed March 31, 2011).

⁵ Alexander Wendt. *Social Theory of International Politics*. (Cambridge, UK: Cambridge University Press, 1999), 299. According to Wendt, despite non-violence and mutual aid pledges, allies may engage in considerable disagreement on the means used to meet their shared objectives. An example would include US-Japanese conflicting views regarding the virtues of differing nuclear declaratory policies used to extend positive assurances.

Japanese national security.⁶ A vital part of this relationship has been positive nuclear assurances underpinning US mutual aid guarantees.

Japan is Janus-faced when it comes to nuclear weapons; the nation is opposed to their existence, but requires the security afforded by them. The origin of Japan's nuclear loathing is not difficult to trace. As the only people in the world attacked with nuclear weapons, the Japanese have a special aversion to them, which they call their "nuclear allergy."⁷ This condition has prompted Japan to become a leading advocate for global nuclear disarmament despite its increasingly complicated security environment.

At the same time, Japan has grown very comfortable with the US-Japanese military alliance and Japan's place under the US nuclear umbrella. At the foundation of Japan's apprehension is the uncomfortable awareness of their vulnerability in the region.⁸ The presence of nuclear-armed neighbors, with whom Japan has had (and still has) antagonistic relations, provides a powerful incentive to continue to seek protection under the US nuclear umbrella. This dissuades them from actively advocating for a nuclear-weapons-free zone in Northeast Asia, from enthusiastically supporting negative security assurances to non-nuclear nations, and from promoting the universal acceptance by the nuclear powers of a sole-purpose nuclear weapons policy.⁹ In the

⁶ Article V of the *Treaty of Mutual Cooperation and Security between the United States of America and Japan*, recognizes that an armed attack against either Party in the territories under the administration of Japan would be dangerous to its own peace and safety and declares that it would act to meet the common danger in accordance with its constitutional provisions and processes.

⁷ Japan's "nuclear allergy" toward nuclear weapons became institutionalized in 1967 when the then-prime minister Sato Eisaku delineated Japan's three nonnuclear principles. First, Sato pledged that Japan would not produce nuclear weapons. Second, Japan would not possess nuclear weapons in its self-defense arsenal. Finally, Japan would not permit other countries, notably the US, to have nuclear weapons on Japanese soil.

⁸ Ralph Cossa and Brad Glosserman. "Extended Deterrence and Disarmament: Japan and the New Nuclear Posture." *The Nonproliferation Review* 18, no. 1 (2011): 137.

⁹ Anthony DiFilippo. *Japan's Nuclear Disarmament Policy and the U.S. Security Umbrella*. (New York: Palgrave Macmillan, 2006), 186.

absence of a more substantive defense capability and, perhaps *its own nuclear capabilities*, Japan must rely on the US for protection.

Since 1998, Japan has experienced a sequence of security challenges, placing it in a period of strategic flux. These events began with the shocking North Korean Teapodong overflight in Aug of 1998, and have continued, with increasing frequency, culminating with the current diplomatic standoff with China over the contested waters in the East China Sea.¹⁰ This string of events has resulted in renewed questioning of the adequacy of Japan's current military strategy, capabilities, posture, and the practicality of legacy US security assurances.¹¹ Highlighting these concerns, as well as Japan's most proximate strategic threats, is their most recent national defense strategy, *FY 2011 National Defense Program Guidelines* (NDPG).¹²

The contents of the NDPG clearly identify Japan's two immediate security threats: The military modernization by China and its insufficient transparency and North Korea's nuclear and missile programs. Japan considers these two issues to be "grave destabilizing factors to regional security." Other factors also continue to complicate Japan's strategic picture, reinforcing the need for extended deterrence. These factors include the potential threat posed by international terrorism, proliferation of WMD to rogue states and non-state actors, concerns about Russia's future, cyber security, potential threats to Middle East energy supplies, and ongoing territorial disputes with Japan's neighbors. The confluence of these threats serve to propagate

¹⁰ Andrew L. Oros. *Normalizing Japan: Politics, Identity, and the Evolution of Security Practice*. (Stanford, Calif.: Stanford University Press, 2008), 175-178. Oros provides an exhaustive list of these security shocks and other important security-related events which have re-defined Japan's post Cold-War security identity.

¹¹ Due to the global shift in the balance of power, brought about by the rise of emerging powers and the relative change of the US influence, some Japanese policy makers have begun to re-evaluate the practicality of legacy security assurances issued by the US.

¹² *Summary of National Defense Program guidelines, FY 2011-*. Tokyo: Government of Japan, 2010.

Japan's continued nuclear schizophrenia with the Japanese Security Council, which observed, "To address the threat of nuclear weapons, Japan will play active role in international nuclear disarmament and non-proliferation efforts, while continuing to maintain and *improve* the credibility of U.S. extended deterrence, with a nuclear deterrent as a vital element."¹³

Although the 2010 NPR was largely welcomed by those in the Japanese national security community, the uncertain security environment generated much apprehension while the declaratory policy was being formulated.¹⁴ Chapter 4 established that US declaratory policy signals commitment to key allies and partners who face nuclear neighbors on how the US might utilize its weapons to underwrite its security assurances. This sentiment is captured well by the 2009 Perry Commission, which was charged with studying US strategic posture. The commission found, "We have considered whether the US should adopt a policy of no-first-use, whereby the US would foreswear the use of nuclear weapons for any purpose other than in retaliation for attack by nuclear means on itself or its allies. *But such a policy would be unsettling to some US allies.*"¹⁵ According to Gregory Kulacki and other Asia security experts, this verbiage implicitly referred to Japanese apprehension of such changes to US declaratory.¹⁶

But what drives this apprehension? Japanese anxiety surrounding "Lead-but-Hedge" stems from four principle concerns: Threat priorities, deterring CBW attacks, warming Sino-US relations, and a lack of

¹³ *Summary of National Defense Program guidelines, FY 2011-.* Tokyo: Government of Japan, 2010, 2.

¹⁴ Cossa, "Extended Deterrence and Disarmament: Japan and the New Nuclear Posture." 125.

¹⁵ *America's Strategic Posture the Final Report of the Congressional Commission on the Strategic Posture of the United States.* (Washington, D.C.: United States Institute of Peace Press, 2009) 36.

¹⁶ Gregory Kulacki. *Japan and America's Nuclear Posture.* (Cambridge, MA: Union of Concerned Scientists Global Security Program, 2010), 2.

regional reciprocity regarding the reduced salience of nuclear weapons. The first issue causing Japanese apprehension is the US-Japanese mismatch in strategic priorities. The 2010 NPR identifies the nexus of technology and terrorism as its most proximate threat.¹⁷ Although plagued by the menace of terrorism, Japan's main strategic threats emanate from traditional state powers, specifically China and North Korea, due to the aforementioned reasons.¹⁸ This lack of strategic harmony concerns the Japanese, as they perceive the preponderance of US deterrence, nonproliferation and counterproliferation efforts aimed at non-state actors. To a nation who dwells in a neighborhood populated by a nuclear brandishing Pyongyang, a rising China, and a resurgent Russia, state actors pose more grave threats than do non-state actors.

Second, the Japanese have expressed concern regarding the softened language of "Lead-but Hedge" in deterring CBW attacks via a nuclear response.¹⁹ As discussed in Chapter 4, many see a first-use option as the best tool for satisfying the broadest range of nuclear problems from deterring CBW attacks to discouraging nuclear transfers. By preserving ambiguity regarding a possible US nuclear response to CBW, nations like North Korea might be discouraged from using them to offset US conventional superiority if they perceived the benefits were outweighed by the risk of nuclear retaliation.²⁰ In the absence of this psychological effect, the Japanese remain apprehensive about policy innovations for fear of diluting the effects of US extended deterrence guarantees.

¹⁷ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010), 3-10.

¹⁸ A startling reminder of the dangers of terrorism is found in the actions of the Aum Shinrikyo group who gained international notoriety in 1995, when it carried out the sarin gas attack on the Tokyo subway.

¹⁹ Cossa, "Extended Deterrence and Disarmament: Japan and the New Nuclear Posture." 131.

²⁰ Richard Soloksky. "Demystifying the Nuclear Posture Review." *Survival* 44, no. 3 (2002): 133-148.

Japan also remains unsure about the future of Sino-US policy relations and with nuclear policy in particular. While the NPR attempts to reduce the salience of nuclear weapons as a foreign policy tool, China's military modernization (to include its nuclear forces), a lack of transparency, and an unknown regional intent looms large in Japan's security calculations.²¹ Washington's warming relations with Beijing give Japanese policymakers pause as they consider the ramifications of their sole security guarantor economically tethered to Japan's principle rival in the region. Many of the aforementioned security challenges to Japan emanate from China or her proxies, and reinforce ill-will between the two nations. With Japanese security experts noting that Chinese modernization goals do not seem commensurate with regional threats, the importance of a credible extended deterrent and an explicit declaratory policy become all the more important.²²

The final driver of Japanese apprehension flows partially from the last. In an attempt to move away from Cold-War thinking, and due in large part to US superiority in conventional forces, the 2010 NPR attempts to reduce the role of nuclear weapons in its grand strategy.²³ However, other nuclear weapon states in the region show no signs that they are willing to make the world safe for US conventional dominance. In fact, Japan's principle regional rivals (China, North Korea, and Russia) have each expressed an increased reliance upon nuclear weapons in their military doctrines. Both China and North Korea continue on a steepened vector of vertical proliferation with both qualitative and

²¹ Muthiah Alagappa. *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*. (Stanford, Calif.: Stanford University Press, 2008), 354.

²² *Summary of National Defense Program guidelines, FY 2011-*. Tokyo: Government of Japan, 2010, 2. Many in the US and Japanese defense establishments have been wary of Beijing's far-reaching military buildup questioning if China's modernization program are too extensive for a country not facing any outside threats. Additionally, China's lack of transparency in military expenditures has further exacerbated regional security dilemmas particularly with those regional nations with competing territorial claims.

²³ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010), 15.

quantitative improvement planned for their arsenals.²⁴ Additionally, due to its erosion in conventional capabilities, Russia has placed heightened emphasis on its nuclear doctrine and capabilities.²⁵ The combined effects of a diminishing US reliance on nuclear weapons and a corresponding increase by potential adversaries creates great anxiety for Japan, a nation with tangled relations with all three.

These four factors coalesce into the basis for a festering security dilemma, with Japanese anxieties expected to increase as the global shift in the balance of power ensues.²⁶ Japan has thus far retained faith in “alternative security arrangements” that are anchored in the US-Japan security relationship. However, in the absence of unyielding positive security assurances, Japan may seek to balance its neighboring rivals with its own defense apparatus if it sees US commitments begin to waiver.

To mitigate this dilemma, Japan retains a latent nuclear weapons capability, which it uses for diplomatic leveraging and hedging against technological and strategic surprise.²⁷ This latent ability gives Japan great influence over US nuclear policy because of the level of import conferred to its nonproliferation efforts. Simply put, the US sees a nuclear Japan as a tipping point on the proliferation issue. A security dilemma that drives Japan to weaponization is a deadly peril to the NPT and the goal of containing proliferation in Asia. Moreover, this change in the regional nuclear security environment could spark dangerous arms races and lead to unprecedented conventional and nuclear militarization

²⁴ "Japan urges China to stop building nuclear arsenal." Indian Express. www.indianexpress.com/news/japan-urges-china-to-stop-building-nuclear-a/619534/ (accessed March 25, 2011). These increases may enable China to transition its doctrine away from its traditional minimal deterrence role to counterforce doctrine. This type of doctrinal shift would be highly destabilizing in the Asia-Pacific Region. Interesting...

²⁵ Stephen Cimbala. "Nuclear First Use: Prudence or Peril." *Joint Forces Quarterly* 4th Quarter, no. 51 (2008): 28.

²⁶ *Global Trends 2025: A Transformed World*. (Washington, D.C.: National Intelligence Council, 2008) 3.

²⁷ Alagappa, *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, 364.

of the Asia-Pacific region. This dangerous possibility can only serve to complicate US deterrence efforts, while attempting to stabilize the region.

Additionally, because of the speed at which Japan could produce a weapon, their latent capability acts as a hedge against undesirable shifts in US and regional security policies.²⁸ Although a latent program has little deterrent value, it has immense signaling power. Owing to an unforeseen security shock in the regional landscape, Japan could field a minimal deterrent quickly to dissuade aggression by regional adversaries. Japan possesses all of the requisite technical capabilities, fuel-cycle programs, and expertise to produce a small but significant nuclear arsenal. Furthermore, utilizing dual-use space technologies, Japan maintains potential ICBM delivery capabilities. Possession of these capabilities are further enhanced by technologies and expertise needed to mate an assembled weapon with a missile.²⁹ Ultimately, without adequate, steadfast, and credible US countervailing forces in the region, Japan may quickly outgrow its “nuclear allergy” and opt for a crash program to field a minimal nuclear deterrent.

The maintenance of US nuclear “extended deterrence” commitments to key allies who face nuclear neighbors, is a both a central security interest for the US and an essential non-proliferation tool.³⁰ Through retaining elements of calculated ambiguity, “Lead-but-Hedge” continues to provide the political and psychological deterrent required to appropriately assure Japan in its rapidly changing security environment. Nonetheless, Japanese complicity to changes in US declaratory policy did not come effortlessly. The US permitted

²⁸ Phillip Margulies. *Nuclear Nonproliferation*. (New York, NY: Facts on File, Inc., 2008), 19. Many believe that if pressed, Japan, with one of the world’s leading economies, could develop, deploy, and maintain a small nuclear arsenal with 12-18 months.

²⁹ Oros, *Normalizing Japan: Politics, Identity, and the Evolution of Security Practice*, 142.

³⁰ Keith B. Payne. *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century*. (Jessup, MD: National Institute Press, 2008) 24-29. According to Payne, successful extended deterrence requires at least three components: adequate military capability, resolve to act in specified circumstances, and communication of that resolve to allies and potential adversaries.

unprecedented levels of coordination and consultation between Tokyo and Washington during the NPR drafting process.³¹ This convergence of thinking yielded two important benefits.

The most important consequence was a reaffirmation, by both parties, to their commitments under the US-Japan alliance. By stressing their shared security interests and interdependence, both nations are better poised for engagement in the Asia-Pacific region.³² Through closer consultation and coordination, the US and Japan were able to dispel any doubts either state harbored with respect to alliance performance roles. These extensive consultations also provided a forum for the Japanese to address and resolve specific factors driving apprehension caused by “Lead-but-Hedge”. Furthermore, enhanced information sharing postures permitted both nations to construct complimentary force structures better able to meet their regional aims. This synergistic partnership of military forces should not only pacify Japan’s growing anxieties, but also improve alliance performance in response to regional threats.

Second, strengthening assurances of allies has proven to be one of the most effective nonproliferation tools in history.³³ Through increased dialogue and understanding of US strategy in the region, Japan shows no overt signs of re-evaluating its nuclear policy due to “Lead-but-Hedge”. To continue this trend, the US must cultivate the perception that deterrence need not solely rest on nuclear weapons. Although these weapons will continue to underpin US-Japan security assurances, an enhanced role for conventional capabilities and robust defenses must be seen—by allies and potential adversaries—to offer both quick punishment for transgressions and denial of any benefit of an attack.

³¹ Cossa, "Extended Deterrence and Disarmament: Japan and the New Nuclear Posture." 125.

³² "America's Engagement in the Asia-Pacific." U.S. Department of State. <http://www.state.gov/secretary/rm/2010/10/150141.htm> (accessed March 27, 2011).

³³ George Bunn, Christopher F. Chyba, and William James Perry. *US Nuclear Weapons Policy: Confronting Today's Threats*. (Stanford, Calif.: Center for International Security and Cooperation, Freeman Spogli Institute for International Studies; 2006), 161.

Ultimately, as declaratory language moves closer to a sole-purpose policy, the US must demonstrate that it is willing meet its obligations by marshalling *all* instruments of national power to underwrite Japan's security.

Implications and Transferability to Other Allies

As Lawrence Freedman, the British strategist, once observed, "Acquiring nuclear capability is a statement of a lack of confidence in all alternative security arrangements."³⁴ Following this logic, as long as US nuclear commitments remain firm, nations benefiting from US extended deterrence guarantees are unlikely to seek internal balancing through nuclear weapons programs. However, firm commitments flow from the alignment of strategic priorities. While the US focuses its nuclear spotlight on non-state actors, many of its allies' existential threats emanate from traditional state actors. To address this mismatch, strategic stability with current nuclear weapons states (i.e., Russia and China) must remain a US priority to appropriately assure allies. This stability is predicated on a safe, secure and effective US arsenal. Thus, for allies to feel assured, both qualitative and quantitative nuclear parity must be maintained for the foreseeable future. Until reaching such a strategic balance, this factor may impose severe limits on the effectiveness of US vertical nonproliferation efforts.

An unmistakable lesson from this survey is that declaratory policy changes have potential to cause great anxiety amongst those covered by current US guarantees. In the interests of nonproliferation, it behooves the US to proactively ease such anxieties before they begin to manifest. Close consultation with affected allies is imperative to meet the goal of ensuring critical elements of each's respective security dilemma are captured and addressed by policy innovations. This task promises to

³⁴ Freedman, Lawrence. "Great Powers, Vital Interests and Nuclear Weapons." *Survival* 4, Winter (1994): 36.

become more challenging as the global shift in the balance of power begins to unfold. As emerging powers rise and allies perceive relative changes in US influence, their individual security calculations and interests may change dramatically. In order to pacify these interests, relinquishing increased information and control to allies over the management of extended deterrence may be required.³⁵ Finally, as the US reduces its dependency on nuclear weapons to deter attacks on its allies, softened nuclear guarantees must be replaced with the perception of enhanced, robust, and durable conventional ones. These commitments must be augmented with forward-deployed offensive and defensive capabilities to fill any perceived psychological gap left by waning nuclear pledges. This may require enhanced obligations in Ballistic Missile Defense (BMD), consequence management, and other counter-weapons of mass destruction capabilities. This demonstration will provide allies' with credible assurances that the US can still mitigate or impede an attack without resorting to first use nuclear pledges.

India: A Competitors View of "Lead-but-Hedge"

As Colin Powell would forewarn in his Senate confirmation hearing to be US Secretary of State, "We must deal wisely with the world's largest democracy. Soon to be the most populous country in the world, India has the potential to help keep the peace in the vast Indian Ocean area and its periphery."³⁶ Advancing to 2011, these prophetic words continue to resonate with accuracy. As a nuclear India's economic power, cultural reach, and political influence increases, it is likely to become a potent competitor with a prospective ability to either help or hinder US

³⁵ For a historical example of increased control and management of nuclear weapons, the NATO flexible response doctrine proves instructive. Under this system, weapons were deployed with a so-called "dual-key system", which permitted the US and the host nation to retain veto over their use.

³⁶ "Statement of Secretary of State-Designate Colin L. Powell, Prepared for the Confirmation Hearing, U.S. Senate Committee on Foreign Relations," January 17, 2001, <http://www.iraqwatch.org/government/US/State/powell-prep-test-confirm.htm>.

deterrence and nonproliferation efforts in the South Asia region.³⁷ Due to this potential, India provides fertile ground to explore recent changes in US declaratory policy and how it might affect the nuclear logic of competitors.

Indian logic regarding its nuclear weapons program is complex, with powerful exogenous and endogenous forces at work. However, exogenous factors, specifically apprehension caused by saber-rattling neighbors, provided the greatest Indian impetus for weaponization of an otherwise peaceful nuclear program. In the period following the end of the Second World War, nations sought to safeguard themselves against the nuclear threat in different ways. As explored in Chapter 3, a vast majority pursued the path of nuclear disarmament in the hope and expectation of eliminating nuclear weapons altogether. China, on the other hand, lost no time in attempting to become a nuclear weapon state. This was to become a major factor in India's nuclear decision-making.³⁸

India was first amongst nations championing for nuclear disarmament in the post-war environment, but quickly driven to reappraisal by animated Sino-Indian relations. After China's invasion of Tibet, the acquisition of a common border with China and the Indian Army's poor showing in the 1962 Sino-Indian border war, the peaceful Indian nuclear program converted into a full-fledged weapon oriented one.³⁹ Furthermore, the program became a top national priority after China detonated its first device in September of 1964, sending a security shock throughout the nation. Despite its zealous pursuit of

³⁷ Hedley Bull, Stanley Hoffmann, and Andrew Hurrell. *The Anarchical Society*. (3rd ed. Basingstoke (Hampshire, GB): Palgrave, 2002), xvii. Bull describes the state of competition as a "mutually expedient arrangement, perhaps within rivalry or even enmity, where individual nations attempt to bring about a beneficial redistribution of wealth and power within the international legal and normative structure of international society."

³⁸ David Rudd, and Stephanie Carvin. *Nuclear Instability in Asia*. (Toronto: Canadian Institute of Strategic Studies, 2003), 30.

³⁹ Kamal Matinuddin. *The Nuclearization of South Asia*. (Karachi: Oxford University Press, 2002), 63.

disarmament, the Chinese test solidified for India that nuclear capabilities could not be confined to a handful of “benign” nuclear weapon states.

Powerful endogenous influences also swayed India towards nuclear weapons. Both philosophical grounds and prestige factors drove these forces. First, India rejected non-nuclear status on philosophical grounds, voicing claims of “nuclear apartheid”. As discussed in Chapter 3, India carried out its first “peaceful” nuclear test in 1974, striking a significant blow to the nonproliferation regime. In the years leading up to its test, India had consistently attempted to pass measures calling for full international disarmament.⁴⁰ Without progress toward nuclear weapons disarmament, if not “general and complete disarmament”, India saw the NPT as perpetuating an unequal world of nuclear have and have-nots. While the existing nuclear powers enjoyed the political and military benefits that came with the possession of nuclear weapons, India had to reconcile itself to second-class status and manage its security dilemma in the absence of superpower security assurances.⁴¹ In light of this, India viewed nuclear weapons as a necessary right for *all nations*, as long as certain states were still in possession of nuclear weapons.

This double-standard was particularly repugnant given India’s colonial history, and served as the basis for India’s second reason for rejection of non-nuclear status: India’s need to satisfy its ambition for prestige.⁴² Robert Gilpin, in *War and Change in World Politics*, describes prestige as a nation’s reputation for power, and military power in particular. Whereas power refers to the economic and military prowess of a state, prestige refers primarily to the perceptions of other states with respect to a state’s capacities and its ability and willingness to exercise

⁴⁰ Jaswant Singh. “Against Nuclear Apartheid | Foreign Affairs.” Home | Foreign Affairs. <http://www.foreignaffairs.com/articles/54391/jaswant-singh/against-nuclear-apartheid> (accessed April 9, 2011).

⁴¹ Rudd, *Nuclear Instability in Asia*, 23.

⁴² Paul S. Kapur. *Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia*. (Stanford, Calif.: Stanford University Press, 2007), 4.

its power.⁴³ For India, a weaponized nuclear program would bolster its prestige in the international political economy and represent a proud symbol of the success of an Indian national security program.⁴⁴

Although the original purpose of the Indian nuclear arsenal was to deter a Chinese invasion, this same arsenal could also threaten or even annihilate Pakistan.⁴⁵ As one would expect, the security generated by the new capability for India translated into a festering security dilemma for its rival to the west. This reality prompted Pakistan to develop its own capability, which it finally demonstrated on 28 May 1998, when it detonated five nuclear devices in the hills of the Chagai district in Balochistan.

When India gained independence from the British Empire in the late 1940s, it split into two nations, the Islamic country of Pakistan and the much larger, multiracial, and multi-religious country of modern India.⁴⁶ Although India's independence movement is famous for its nonviolence, the breakup of India and Pakistan was mired in terrible bloodshed. Estimates regarding the number of Muslims and Hindus killed in sectarian violence exceed 1 million with some 6 million displaced refugees between the two nations.⁴⁷ Since then, India and Pakistan have fought three wars and engaged in a continuous struggle over the province of Kashmir. Because of India's conventional and nuclear asymmetry over Pakistan, low-level conflict and terrorism have emerged as Pakistan's chosen means of fighting. Owing to the character

⁴³ Gilpin, *War and Change in World Politics*, 31. According to Gilpin, prestige, rather than power, is the everyday currency of international relations. In the language of contemporary strategic theory, prestige involves the credibility of a state's power and its willingness to deter or compel other states in order to achieve its objectives.

⁴⁴ "India's Nuclear Weapons Program—The Beginning: 1944-1960." The Nuclear Weapon Archive - A Guide to Nuclear Weapons.
<http://nuclearweaponarchive.org/India/IndiaOrigin.html> (accessed March 28, 2011).

⁴⁵ Peter R. Beckman. *Nuclear Weapons, Nuclear States, and Terrorism*. (4th ed. Cornwall-on-Hudson, NY: Sloan Pub., 2007) 175.

⁴⁶ "BBC NEWS | South Asia | Partitioning India over lunch." BBC News - Home.
http://news.bbc.co.uk/2/hi/south_asia/6926464.stm (accessed April 6, 2011).

⁴⁷ Margulies, *Nuclear Nonproliferation*, 10.

of these hostilities, India views Pakistan as a state-sponsor of terror. As a result, and not unlike the US, India clings to fears that a Pakistani-sponsored terrorist group could acquire and employ a nuclear device in India.⁴⁸ The cumulative effects of possible nuclear terrorism, continued violence in disputed areas, and a Pakistani first-use doctrine has left India with powerful incentives to enhance its nuclear deterrent.⁴⁹

Thus, the threat from China, coupled with a near perpetual state of war with Pakistan, has reinforced India's notions regarding the value of nuclear deterrence. The primary role of Indian nuclear weapons is the deterrence of Chinese and Pakistani nuclear attacks. Because of its small arsenal, it places an emphasis on minimal deterrence and a no-first-use policy against non-nuclear weapon states.⁵⁰ Additionally, India insists the *raison d'être* for its arsenal is also rooted in its desire for nuclear disarmament. As Indian National Security Advisor, Shri Shivshankar Menon, stated in October of 2010, "We have made it clear that while we need nuclear weapons for our own security, it is our goal to work for a world free of nuclear weapons, and that we are ready to undertake the necessary obligations to achieve that goal in a time-bound program agreed to and implemented by all nuclear weapon and other states."⁵¹ Despite these lofty goals, according to its 2003 official

⁴⁸ Daniel Byman. *The Changing Nature of State Sponsorship of Terrorism*. (Washington, D.C.: Saban Center for Middle East Policy at the Brookings Institution, 2008), 7. According to this report the nightmare of a terrorist group acquiring nuclear weapons is far more likely to involve Pakistan than it is Iran or North Korea.

⁴⁹ Pakistan has adopted a "minimal credible deterrence" posture. This consists of a massive retaliation with first strike kept open as a flexible response to Indian overwhelming conventional force. This doctrine was promulgated in President Pervez Musharraf's statements on 28 May 2002. Musharraf said that Pakistan did not want a conflict with India but that if it came to war between the nuclear-armed rivals, he would "respond with full might." These statements were interpreted to mean that if pressed by an overwhelming conventional attack from India, which has superior conventional forces, Pakistan would use its nuclear weapons.

⁵⁰ According to the Federation of American Scientists', *Nuclear Forces Guide*, India possesses less than 100 weapons. Data Current as of 9 April 2011.

⁵¹ "Speech by the Indian National Security Advisor Shri Shivshankar Menon at the Indian National Defense College on "The Role of Force in Strategic Affairs". MEA - Ministry of External Affairs. <http://www.mea.gov.in/mystart.php?id=530116584> (accessed March 27, 2011).

statement of nuclear posture, “India reserves the right to use nuclear weapons in response to a chemical or biological weapons attack on Indian soil or against Indian forces anywhere.”⁵² This appears to be an important departure from its 1999 NFU policy, suggesting that Indian leaders may resort to nuclear use at considerably lower levels of conflict than previously thought.

Despite India’s longstanding blood feud with Pakistan, its main strategic threat still emanates from China. Until recently, India has focused on building its nuclear forces against Pakistan. Now that India has built an adequate nuclear deterrent against its northwestern neighbor, one would expect India to strive towards parity with China.⁵³ India is outmatched by China both conventionally as well as quantitatively in nuclear weapons. China's massive build-up of military infrastructure along their shared borders, its strategic moves in the Indian Ocean Region and rapid modernization of the People's Liberation Army cause great apprehension for the Indian national security establishment.⁵⁴ This comes in the backdrop of an increasing Chinese footprint in Pakistan occupied Kashmir, both in terms of projects as well as personnel. Strategic collusion between China and Pakistan threatens the balance of power in the region, a paramount concern for India. These factors form the basis for Indian strategic security calculations with the behaviors of China and Pakistan as key drivers in their nuclear policy.

Owing to the aforementioned factors, the advent of “Lead-but Hedge” is unlikely to alter India’s nuclear trajectory. Decisions to

⁵² Jafar Naspal. "Defence Notes." *Defence Journal* - MARCH 2011. <http://www.defencejournal.com/2003/apr/ind-nuclear.htm> (accessed April 9, 2011).

⁵³ Alagappa, *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, 210.

⁵⁴ Rahul Singh. "China now bigger threat than Pakistan, says IAF chief." *Hindustan Times: Latest Breaking News from India, Cricket, Bollywood, World, Business, Videos*. <http://www.hindustantimes.com/China-now-bigger-threat-than-Pakistan-says--IAF-chief/Article1-413933.aspx> (accessed March 27, 2011).

deemphasize nuclear weapons in Indian security policy are improbable due to four primary reasons. First, Indians do not think that the NPR affects major changes in US nuclear policy. As discussed in Chapter 4, from a purely strategic perspective, the new declaratory policy changes little from previous statements. Indians view that calculated ambiguity is still deeply imbedded within US nuclear logic. In fact, Indian strategists believe that the new US policy fails even to match India's current degree of nuclear restraint.⁵⁵ Therefore, according to Indian experts, the 2010 NPR will have little impact on the Indian strategic discussion.⁵⁶

Second, although "Lead-but-Hedge" reduces the salience of nuclear weapons in US grand strategy, it does nothing to alter key drivers in India's regional security environment. An assertive China remains particularly worrisome for India, and remains the focus of their strategic calculations. While Pakistan is usually cast as India's nemesis, it is not its central nuclear competitor. Pakistani threats were an important motive for original acquisition, but will not be the source of future expansion.⁵⁷ This sentiment was highlighted in September 2010 when India's Defense Minister and all three Service chiefs were of the opinion that China posed "a longer-term threat" than did Pakistan.⁵⁸ Wary of this reality, Indians take note that "lead-but-Hedge" shows no sign of

⁵⁵ In its 2003 nuclear posture statement, India pledges it would not use nuclear weapons against non-nuclear weapon states. Against nuclear weapon powers, its strategy would remain one of "No-first use". But the nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage on the enemy. Therefore, India would build and maintain a credible second-strike capability.

⁵⁶ Kapur, Paul. "More Posture than Review." *The Nonproliferation Review* 18, no. 1 (2011): 73.

⁵⁷ Creasman, David J. *The Evolution of India's Nuclear Program: Implications for the United States*. (Ft. Belvoir: Defense Technical Information Center, 222008) 33. Pakistan has a small deterrent and an conventional capability inferior to that of India. Due to Pakistan's small economy and modest weapon production capability, it is unlikely that any type of nuclear parity with India is possible.

⁵⁸ Pandit, Rajat. "Assertive China a worry, says Antony - Times of India." Featured Articles From The Times Of India. http://articles.timesofindia.indiatimes.com/2010-09-14/india/28264549_1_military-brass-build-up-of-military-infrastructure-border-infrastructure (accessed April 9, 2011).

altering the upward trajectory in Chinese nuclear and conventional modernization plans.⁵⁹ Unless US policy has a demonstrable affect on China's nuclear logic and reduces the dangers emanating from its western border, India's nuclear policies are unlikely to change as a result.

Third, as India's competitor, the US will retain a robust nuclear force under the NPR guidelines with the ambiguity inherent in "Lead-but-Hedge" at its core. The US arsenal will be comprised of more than 1,500 strategic warheads and maintain its triad of nuclear delivery platforms. It will also continue to develop missile defense systems, retain forward deployment capabilities for theater nuclear weapons, and make substantial new investments in US nuclear infrastructure (including weapons complexes, personnel, and research programs).⁶⁰ With such an imposing force, the US continues to propagate perceptions of the prestige and influence imparted by the possession of nuclear weapons. To India and other competitors, it appears that the world's most affluent and powerful nation continues to believe that nuclear weapons are an important instrument of national power. This perception contributes to India's claims of US nuclear hypocrisy, as it seeks to both retain its nuclear weapons and lead the NPT regime to prevent others from acquiring them.⁶¹ Owing to these reasons, Indians will pay little attention to US nuclear declaratory policy while developing its own strategic calculus.

Finally, "Lead-but-Hedge" promises to have little impact on India's nuclear nonproliferation norms—either horizontal or vertical. Although

⁵⁹ When the 2010 NPR was published, Beijing was aggressively modernizing its nuclear missile forces with the deployment of the DF-31 and DF-31A mobile intercontinental ballistic missiles (ICBMs) and development of the JL-2 submarine-launched ballistic missile (SLBM) for the PLA Navy's new Jin-class nuclear-powered ballistic missile submarines (SSBNs).

⁶⁰ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) i.

⁶¹ Michael Gerson. "No First Use: The Next Step for Nuclear Policy." *International Security* 35, no. 2 (2010): 35.

not a signatory of the NPT, no evidence can be found that India has ever spread nuclear weapons, materials, or technologies to third parties and is not likely to change course and share them with terrorists at any point in the future.⁶² Thus, the NPR declaratory policy language explicitly targeting proliferators is not applicable to India. Furthermore, vertical proliferation will most likely continue in an attempt to maintain a relative level of parity with China—India's key strategic rival. In fact, the US has buttressed this growth by lifting the three-decade US moratorium on nuclear trade with India.

In October 2008, the US Congress approved the US-India Civil Nuclear Cooperation Initiative facilitating nuclear cooperation between the United States and India.⁶³ The agreement provides US assistance to India's civilian nuclear energy program permitting US and Indian companies to partner together in ways that will offer India greater energy security with stable sources of energy for its large and growing economy. Although touted as providing "significant gains for the global nonproliferation regime", some see the deal as introducing a new negative aspect to international nonproliferation efforts.⁶⁴ Under the guidelines of the initiative, the Nuclear Suppliers Group would send, or allow others to send, special nuclear materials to India. While India has pledged that any US assistance to its civilian nuclear energy program will not benefit its nuclear weapons program, experts say India could use imported nuclear fuel to feed its civilian energy program while diverting its own nuclear fuel to weapons production.⁶⁵ Thus, India's upward

⁶² Kapur, "More Posture than Review", 69.

⁶³ "U.S. - India: Civil Nuclear Cooperation." U.S. Department of State. <http://www.state.gov/p/sca/c17361.htm> (accessed April 11, 2011).

⁶⁴ In exchange for nuclear materials and technologies, India will allow more intrusive IAEA inspections of its civilian facilities (the IAEA "Additional Protocol"), commit to a continued moratorium on nuclear tests, and pledges to strengthen the security of its nuclear arsenals.

⁶⁵ Jayshree Bajoria. "The U.S.-India Nuclear Deal - Council on Foreign Relations." Council on Foreign Relations. <http://www.cfr.org/india/us-india-nuclear-deal/p9663> (accessed April 10, 2011).

nuclear trajectory will likely remain unchanged by the release of the NPR's new declaratory policy.

India's vertical proliferation has the potential to alter significantly US nuclear deterrence goals in South Asia. China's rise in the region has prompted the US to seek a more robust strategic relationship with India. By cementing these relationships through programs like the US-India Civil Nuclear Cooperation Initiative, the US seeks to counterbalance China's regional hegemony. India is pivotal for US efforts to create a geopolitical balance in South Asia. It creates a hedge against Chinese and Russian power and helps maintain the pressure on Pakistan to help contain jihadists.⁶⁶ However, supplying nuclear materials and technology can also have adverse affects. By facilitating India's vertical proliferation, the US could inadvertently foster a fledgling nuclear rivalry between India and China causing a dangerous nuclear arms race. Realization of this scenario could drive perilous action-reaction cycles with deleterious effects on regional stability. US regional deterrence efforts would inevitably become more complicated, delicate, and prone to catastrophic breakdown. Accidental or catalytic regional nuclear war could more easily erupt through entangling alliances threatening to draw in other nuclear weapons states in the region.

Implications and Transferability to Other Competitors

Several lessons gleaned from the Indian reaction to "Lead-but-Hedge" are readily transferable to other competitors. First, like India, competitors aspiring to possess or possessing nuclear weapons will continue to develop their nuclear logic based on the context of both the regional and strategic security environment and not the nuclear declarations of the US. It is unlikely these nations will simply emulate US strategic behavior in the absence of real reductions in the threats

⁶⁶ George Friedman. "India's Strategic Alliances | STRATFOR." STRATFOR - Geopolitical intelligence, economic, political, and military strategic forecasting | STRATFOR. http://www.stratfor.com/theme/indias_strategic_alliances (accessed April 20, 2011).

driving their respective security dilemmas. For example, if “Lead-but-Hedge” and US weapons reductions were to somehow stimulate nuclear disarmament in China, India may perceive a reduced threat and thereby reduce its own arsenal. However, no such signs of this moderating effect on China’s nuclear behaviors are apparent. Moreover, reductions in the security dilemma alone may not be sufficient to halt a competitor’s nuclear aspirations. Ultimately, competitors may have other motivations—including regional ambitions and prestige requirements—to acquire nuclear weapons.⁶⁷

Additionally, there is little evidence to suggest that changes in US nuclear declaratory policy, especially subtle changes, exert a significant influence on the nuclear decisions of competitors. This is especially true if a competitor’s nuclear declaratory policy is currently more restrictive than the caveat-rich “Lead-But Hedge” policy. India’s response to the NPR indicates that “baby steps” towards sole-purpose or no-first-use policies are unlikely to set a desired example the US wants others to mimic. As the US asserts a de-emphasized role for nuclear weapons in its strategic posture, competitors take note of the striking similarities between the previous policies and “Lead-but Hedge” as explained fully in Chapter 4. Thus, competitors will likely be unmoved by the new policy. This sentiment was best captured by Dr. Brahma Chellaney, widely regarded as one of India’s leading strategic thinkers and analysts, when he stated, “the NPR was all posture and no review.”⁶⁸

Finally, despite NPR assurances, the US continues to send mixed signals regarding the actual salience of nuclear weapons in its strategic calculus. For competitors eagerly watching for disconnects between rhetoric and action, the US reinvigoration of their nuclear enterprise is

⁶⁷ Soloksky, Richard. “Demystifying the Nuclear Posture Review.” *Survival* 44, no. 3 (2002): 136.

⁶⁸ Brahma Chellaney. “The NPT’s Uncertain Future.” *The Japan Times Online*. <http://search.japantimes.co.jp/cgi-bin/eo20100807bc.html> (accessed April 21, 2011).

unsettling to those perceptive to US changes in military doctrines and capabilities. Heavy investments, in terms of critical infrastructure and human capital, give competitors no compulsion to consider reducing their own arsenals.⁶⁹ The new NPR charts a clear path to modernization, and is designed to sustain a massive “safe, secure, and effective” nuclear arsenal. Many competitors see robust nuclear investments as hypocritical, and perceive these actions to be a blatant attempt to perpetuate an unequal world of nuclear hegemony.⁷⁰ Until the US and Russia can reduce their vast arsenals to levels approaching those of their nearest distant competitors, “Lead-but-Hedge” promises to have little effect on their respective nuclear decisions.

Iran: A Rivals View of “Lead-but-Hedge”

In President Obama’s January 27, 2010 State of the Union Address, he warned the Islamic Republic, “As Iran's leaders continue to ignore their obligations and violate international agreements in pursuit of nuclear weapons, there should be no doubt: They too will face growing consequences. That is a promise.”⁷¹ Released shortly thereafter, the 2010 NPR classified Iran as a potential nuclear target under the caveat-laden “Lead-but-Hedge” policy. Using these signaling tools, the US intended to send an unambiguous message to its long-time rival that it planned to make good on its promises.⁷² Yet despite US nuclear threats

⁶⁹ *Nuclear Posture Review Report*. (Washington, DC: U.S. Dept. of Defense, 2010) 39-44. The Administration will fully fund the ongoing LEP for the W-76 submarine-based warhead for a fiscal year (FY) 2017 completion, and the full scope LEP study and follow-on activities for the B-61 bomb to ensure first production begins in FY2017. Additionally, the US nuclear complex will receive a \$5 billion infusion of capital to regenerate specific capabilities and strengthen its science, technology, and engineering base to “reinvigorate” the nuclear enterprise.

⁷⁰ Kapur, “More Posture than Review”, 79.

⁷¹ Barack Obama. “Remarks by the President in State of the Union Address | The White House.” The White House. <http://www.whitehouse.gov/the-press-office/remarks-president-state-union-address> (accessed April 23, 2011).

⁷² A classic definition of state rivalry can be found in Paul F. Diehl and Gary Goertz’s *War and Peace in International Rivalry*. (Ann Arbor: University of Michigan Press, 2000)12-15. In their seminal work, the authors define rivalry as a relationship between

and isolation from the international community, Iran continues to nurture its latent nuclear program. What is the source of Iran's defiance? This question provides fertile ground in exploring how recent changes in US declaratory policy affect the nuclear logic of rivals.

Iran has been a nuclear aspirant for many years and has been piecing together critical components, materials, technology, and skills for decades.⁷³ The Iranian nuclear program began in 1957 under the "Atoms for Peace Program," where Iran and the US planned to collaborate on civilian nuclear energy development. By 1967, US aid resulted in a small research reactor located at Tehran University. In exchange for continued US nuclear assistance in an ambitious civilian nuclear program, Iran signed the NPT in 1968 and ratified it in 1970.⁷⁴ During this time, Shah Mohammad Reza Pahlavi also expressed an interest in nuclear weapons, and set up a clandestine research group to explore their design and manufacture.⁷⁵ As a result, when Ayatollah Ruhollah Khomeini's revolution toppled the Shah in 1979, the new Islamic Republic of Iran inherited extensive nuclear hardware, materials, and technology. Ayatollah Khomeini initially deemed the nuclear program

two states in which both use, with some regularity, military threats and force as well as in which both sides formulate foreign policy in military terms. Additional understanding of the roots of international rivalry can also be found in William R. Thompson's, *Strategic Rivalries in World Politics: Position, Space and Conflict Escalation*. (Cambridge University Press, 2008) 25. Thompson posits that rivals must be selected. Three selection criteria appear most important. 1.) The actors in question must regard each other as competitors; 2.) Consider each other as a source of actual or latent threats posing some possibility of becoming militarized; and 3.) Regard each other as enemies. According to Thompson, these criteria are not options. All three criteria must be present for rivalry to exist.

⁷³ Saira Khan. *Iran and Nuclear Weapons Protracted Conflict and Proliferation*. (London: Routledge, 2010), 110.

⁷⁴ For a detailed timeline of the Iranian nuclear program, see the Nuclear Threat Initiative at http://www.nti.org/e_research/profiles/Iran/Nuclear/chronology.html. Under the Nixon and Ford administrations, an extremely ambitious nuclear energy program was planned. Guided by a new Atomic Energy Organization of Iran, Western firms would manufacture twenty-three nuclear power reactors over roughly twenty years.

⁷⁵ Nathan E. Busch and Daniel Joyner. *Combating Weapons of Mass Destruction: The Future of International Nonproliferation policy*. (Athens: University of Georgia Press, 2009), 298.

"un-Islamic," and ordered it terminated. However, faced with the reality of the devastating human costs of the Iran-Iraq war and Iraq's use of WMD against the Iranian people, leaders were persuaded of the need for a strong deterrent.⁷⁶ In 1984, Khomeini reversed course on the issue of nuclear power, thus beginning Iran's stalwart resolve in garnering a viable nuclear program with military applications.

A complex mixture of fear, honor, and interest has driven Iran's dogged nuclear determination. However, fear of rivals has traditionally served as the proximate cause for its relentless and unswerving pursuit of nuclear weapons. In the aftermath of the Iran-Iraq stalemate, Iran has continuously engaged in protracted territorial and ideological conflicts with Iraq, Israel, and the US. These conflicts have reinforced Iran's imperative to develop nuclear weapons. However, security threats emanating from Iraq were the initial impetus for Iran's quest for nuclear weapons. The near decade-long Iran-Iraq war had a tremendous impact on Iran's nuclear logic. Although Iran was symmetrically stronger, in terms of conventional forces, an opportunistic Iraq had shown that it was willing to attack when it saw a window of opportunity. This left a festering security dilemma on Iran's long western border. Additionally, Iraq had embarked on an aggressive nuclear program beginning in the early 1980s, which it continued to pursue after the cessation of hostilities in 1988.⁷⁷ These perceived security threats were key drivers in Iran's desire to match the nuclear capabilities of its hostile neighbor, and obtain a deterrent capability to thwart future attacks.

⁷⁶ The Iran-Iraq war (September 1980 to August 1988) came at a great cost in lives and economic damage—Over 1 million Iranian soldiers as well as civilians are believed to have died in the war with many more injured—but it brought neither reparations nor change in borders. Additionally, Iraq had used WMD against Iran with very little international condemnation. These factors strengthened Iran's resolve to re-invigorate its nuclear program.

⁷⁷ Christopher Yeaw. "Nonproliferation, Emerging Weapon States, and Their Nuclear Policies and Postures." Lecture, Nuclear Strategic Issues from United States Naval War College, Newport, October 15, 2010.

Additionally, Iran's security concerns vis-à-vis Israel was another powerful motivating factor in its nuclear logic. By and large, the Arab-Israeli conflict has only worsened since Israel declared independence in 1948; nonetheless, relations between Israel and Iran during the Shah's rule were generally positive. However, with the advent of the Islamic revolution, Israel became an important enemy, which, for political and religious reasons, needed to be "wiped off the map".⁷⁸ Sharp rhetoric changed into reality when Iran dispatched an expeditionary force of Revolutionary Guards to Lebanon and created Hezbollah as a proxy, to prosecute its political aims in the 1982 Lebanon war.⁷⁹ Branding these activities as Iranian-sponsored terrorism, a nuclear armed, determined, and US-supported Israel began to threaten Iran militarily, setting in motion a protracted conflict that still exists today.

Since 1979, Iran engaged in yet another protracted conflict, but this time with a superpower rival—the US.⁸⁰ After the Islamic Revolution, US-Iranian relations have been sporadic at best and marred by mutual distrust. Propelled by continuous animosity, caused by such instances as the 1953 overthrow of the Iranian government, the Iranian hostage crisis, and the Iran-Contra affair, misgivings between the two nations run deep. This mistrust has been exacerbated by Iran's support for terrorism and, most recently, their apparent intentions to develop nuclear weapons.⁸¹ Tensions spiked in 2001, with the forcible unseating of the Islamic government of Afghanistan, and peaked in 2002 when President George W. Bush called Iran a member of the "axis of evil."

⁷⁸ Mahmoud Ahmadinejad. "Text of Mahmoud Ahmadinejad's Speech - New York Times." The New York Times - Breaking News, World News & Multimedia. <http://www.nytimes.com/2005/10/30/weekinreview/30iran.html> (accessed April 23, 2011).

⁷⁹ William M. Arkin. *Divining Victory: Airpower in the 2006 Israel-Hezbollah War*. (Maxwell Air Force Base, Ala.: Air University Press, 2007) 19-23.

⁸⁰ Khan, *Iran and Nuclear Weapons Protracted Conflict and Proliferation*, 115.

⁸¹ For a detailed timeline of US-Iran interactions, see the Council on Foreign Relations website at http://www.nti.org/e_research/profiles/Iran/Nuclear/chronology.html.

during his State of the Union Address.⁸² Iran felt humiliated, offended and significantly threatened by such language, and since the US invasion of Iraq in 2003, it was a distinct possibility that the US would target “axis of evil” states, one after the next, to force regime change. These events affected Iran’s assumptions regarding nuclear weapons in significant ways. Despite its regional concerns with Israel, and ideological differences with the Gulf Cooperation Council states (GCC), Iran’s nuclear ambitions would now be focused on its asymmetric conflict with the US.

As the US and global community continues to isolate Iran through aggressive foreign policies, Iran has seemingly stepped up its unrelenting pace weapons development.⁸³ Iran’s resilience is partially explained through Iranian honor and interest motivations giving added momentum to its nuclear program. Iranian elites see themselves as direct descendents of a magnificent Islamic and pre-Islamic empire, destined to re-capture their leading role in the Islamic world and on the international stage.⁸⁴ As the custodian of enormous energy wealth, and overseer of the one of the world’s most valuable strategic chokepoint, Iran seeks to leverage these assets to become a great power—either a regional hegemon or an emerging global power like India or China.⁸⁵ A nuclear program, a symbol of national pride and sovereignty, is a vital element of

⁸² George W. Bush. "President Delivers State of the Union Address." Welcome to the White House. <http://georgewbush-whitehouse.archives.gov/news/releases/2002/01/20020129-11.html> (accessed April 23, 2011). Iraq and North Korea were also identified as members of this dubious club.

⁸³ "Iran's Nuclear Program - News - The New York Times." Times Topics. http://topics.nytimes.com/top/news/international/countriesandterritories/iran/nuclear_program/index.html (accessed April 23, 2011).

⁸⁴ Dore Gold. *The Rise of Nuclear Iran: How Tehran Defies the West*. (Washington, D.C.: Regnery Pub.; 2009) 20.

⁸⁵ George Friedman. "The Strait of Hormuz Incident and U.S. Strategy." STRATFOR - Geopolitical intelligence, economic, political, and military strategic forecasting | STRATFOR. http://www.stratfor.com/weekly/strait_hormuz_incident_and_u_s_strategy (accessed April 23, 2011). Over 40% of the region’s oil wealth passes through the Strait of Hormuz making it one of the world’s most important strategic choke points.

Iran's ability to project power, since great prestige is correlated with a countries' nuclear prowess.⁸⁶

Despite these alternate motivations, the strategic objective of Iran's leadership is, first-and-foremost, regime survival.⁸⁷ Iranian leadership pursues a strategy intended to deter attacks on its territory and increase its relative power in the region. This strategy makes the acquisition of nuclear weapons an appealing prospect for Iran, when confronted with the conventional and nuclear asymmetries possessed by the US and Israel. An Iranian nuclear capability would make the costs of confrontation so high that the US and its allies would be dissuaded from invading Iran, reversing the revolution, or toppling the present regime. The vehement US resistance to a nuclear Iran seems to substantiate and intensify this proposition. From Tehran's perspective, acquiring nuclear weapons makes Washington fear you or respect you, but either way it takes you seriously.⁸⁸ Iranian leaders have noted the contrasting fates of other "axis of evil" members. A *nuclear-capable* Kim Jong IL has successfully fended off US aggression and preserved his totalitarian regime, but a nuclear-bereft Saddam Hussein was humiliated twice on the battlefield and ultimately vanquished by an undeterred US military machine. Iranians are also perceptive to the current plight of a nuclear-weaponless Muammar Gaddafi, who gave up a thriving program under international pressure and is now a target of regime change by NATO.⁸⁹ This condition is an ominous reinforcement of Iran's refusal to end its

⁸⁶ Alagappa, *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, 354.

⁸⁷ "Defense Intelligence Agency Public Affairs: Testimonies & Speeches." Defense Intelligence Agency. <http://www.dia.mil/public-affairs/testimonies/2010-04-13.html> (accessed March 29, 2011).

⁸⁸ Alagappa, *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, 308.

⁸⁹ McDonald, Mark. "North Korea Says Libya Should Have Kept Nuclear Program - NYTimes.com." The New York Times - Breaking News, World News & Multimedia. http://www.nytimes.com/2011/03/25/world/asia/25korea.html?_r=1 (accessed March 29, 2011).

own nuclear program and reaffirms a well-known adage: Before one challenges the US, one must first acquire nuclear weapons.

However, Iran has also taken advantage of asymmetries to achieve its political aims. Outclassed by its strategic rivals, both conventionally and in terms of nuclear capabilities, low-level conflict has become Iran's *modus operandi*. Iran has extended its outreach and support to governments and groups that oppose US interests and threaten regional security. Diplomacy, economic leverage, and active sponsorship of terrorist and paramilitary groups are tools Iran uses to implement or further its aggressive foreign policy.⁹⁰ In particular, Iran uses terrorism to pressure or intimidate other countries, and, more broadly, to serve as a strategic deterrent. An Iranian nuclear capability would provide an umbrella of safety for increased and more daring uses of this instrument.

Ultimately, Iran's nuclear logic and security calculations will be based primarily on the behaviors and actions of its US rival. Iran has been very perceptive to changes in US military doctrine, with the declaratory language of "Lead-but-Hedge" as no exception. Under the new guidelines, Iran (a non-nuclear weapon state and NPT member) is classified as a US nuclear target as a result of its non-compliance with nonproliferation obligations.⁹¹ This categorization has fomented outrage from the regime with Supreme Leader Ayatollah Ali Khamenei telling senior military commanders that President Obama's threats to use nuclear arms against Iran, "shows that the US government is a wicked and unreliable government...In recent years, the Americans made many efforts to show that the Islamic Republic of Iran is unreliable in the nuclear issue...it is now clear that the governments that possess atomic

⁹⁰ "Defense Intelligence Agency Public Affairs: Testimonies & Speeches." Defense Intelligence Agency. <http://www.dia.mil/public-affairs/testimonies/2010-04-13.html> (accessed March 29, 2011).

⁹¹ Iran's opaque intentions and continued refusal to comply fully with International Atomic Energy Agency (IAEA) and UN Security Council resolutions has placed Iran in a category in which they no longer qualify for US pledges not to use nuclear weapons against countries that do not have them.

bombs and shamelessly threaten to bomb others are the unreliable ones.”⁹² Iranian President Mahmoud Ahmadinejad echoed these sentiments when he derided President Obama over the new nuclear policy: "American materialist politicians, whenever they are beaten by logic, immediately resort to their weapons like cowboys."⁹³

The defiant Iranian response to “Lead-but-Hedge” suggests that the new policy may have a reinforcing instead of a moderating effect, on Iran’s current nuclear trajectory. According to statements from the Iranian delegation at the May 2010 NPT Review Conference, the Obama administration’s nuclear doctrine is even *more* threatening to non-nuclear weapon states than the Bush administration’s (a position that led Iran to call for the exclusion from the International Atomic Energy Agency of nuclear weapon states that threatened non-nuclear weapon states).⁹⁴ From Iran’s perspective, the ambiguity inherent in “Lead-but-Hedge,” the deployments of robust missile defense systems, as well as other strategic and security policies, are all designed to combat countries like Iran. In light of these aggressive US foreign policies, the Iranian security dilemma has been exacerbated and exerted powerful influences on Iran’s nuclear logic. One Iranian analyst noted, “If Iran, as a non-nuclear weapons state, faces the threat of nuclear ‘first use’ by the US, why shouldn’t Tehran proceed to the actual acquisition of nuclear weapons?”⁹⁵ To avoid US nuclear coercion, Iran may feel compelled to acquire nuclear weapons regardless of the international and domestic

⁹² Flynt Leverette. "Iran Reacts to Becoming a Nuclear Target." *The Race for Iran*. <http://www.raceforiran.com/iran-reacts-to-becoming-a-u-s-nuclear-target> (accessed March 29, 2011).

⁹³ "Iran Ridicules Obama Nuclear Policy - USATODAY.com." *News, Travel, Weather, Entertainment, Sports, Technology, U.S. & World - USATODAY.com*. http://www.usatoday.com/news/world/2010-04-07-iran-us-nuclear_N.htm (accessed April 24, 2011).

⁹⁴ Harold Muller. "Obama’s Nuclear Policy and the 2010 NPT Conference." *Nonproliferation Review*, 18, no. 1 (2011): 226.

⁹⁵ Flynt Leverette. "Iran Reacts to Becoming a Nuclear Target." *The Race for Iran*. <http://www.raceforiran.com/iran-reacts-to-becoming-a-u-s-nuclear-target> (accessed March 29, 2011).

costs. Thus, the administration's tough stance may deter Iran, but at the same time, calcify their commitment to nuclear proliferation.

During her address at the May 2010 NPT review conference, US Secretary of State Hillary Clinton remarked, "The Middle East presents the greatest threat of nuclear proliferation in the world today."⁹⁶ Secretary Clinton was implicitly referring to Iran's nuclear trajectory, intimating that a nuclear-armed Iran could have deleterious effects for the nonproliferation regime. A verifiable Iranian nuclear capability or a sudden withdrawal from the NPT could have dire consequences in the region and cause an epidemic of horizontal proliferation throughout the "atomic arc of instability."⁹⁷ In a March 2009 hearing before the US Senate Foreign Relations Committee on *US Strategy Regarding Iran*, Brent Scowcroft described the regional security dilemma a nuclear Iran would pose: "We're on the cusp of an explosion of proliferation, and Iran is now the poster child. If Iran is allowed to go forward, in self-defense or for a variety of reasons, we could have half-a-dozen countries in the region and 20 or 30 more around the world doing the same thing just in case."⁹⁸ In the midst of a menagerie of Middle Eastern and Asian countries that could rapidly "go nuclear," a nuclear Iran could spark regional arms races and lead to unprecedented conventional and nuclear militarization. Compounding this frightening outlook is the prospect of newly minted nuclear powers with profoundly different cultures and political systems, which may not share the US view that nuclear weapons are weapons of last resort.

⁹⁶ Hillary Clinton, "Secretary Clinton's Remarks at NPT Review Conference," State Department, May 3, 2010, www.america.gov/st/texttrans/english/2010/May/20100504083001bpuh7.084292e-02.html.

⁹⁷ Within the "Atomic Arc of Instability" is a nuclear Asia stretching from the Persian Gulf to the Sea of Japan.

⁹⁸ *U.S. Strategy Regarding Iran: Hearing before the Committee on Foreign Relations, United States Senate, One Hundred Eleventh Congress, first session, March 5, 2009.* (Washington: U.S. G.P.O., 2009) 12.

Equally disturbing is the notion of nuclear emboldened Iran proliferating within its well-established proxy network. Over the last three decades, Iran has methodically cultivated a network of sponsored terrorist allies and surrogates capable of conducting effective, plausibly deniable attacks against the US and Israel.⁹⁹ Will Iran continue to follow its pre-established model and transfer weapons or materials to its network for use against the US or Israel? While this scenario should *not* be ruled out, Iran will have strong incentives not to proliferate to terrorists. As mentioned above, Tehran is trying to turn itself into a regional and global power. Once it achieves a nuclear capability, protecting and sustaining it will likely push Iran in the direction of responsible stewardship. Notwithstanding its past deeds, Tehran is likely to portray itself to the world's nuclear establishment as a responsible nuclear power.¹⁰⁰ Furthermore, after several expensive and frustrating decades of trying to develop nuclear weapons, leaking warheads or fissile materials to terrorists would represent a waste of precious time, effort, resources and pose an existential threat to Iran.¹⁰¹ With "Lead-but-Hedge" assuring an appropriately ruinous nuclear response for this type of transfer, Iranian leaders will be extremely wary of US capabilities to credibly attribute to Iran responsibility for nuclear-

⁹⁹ "Defense Intelligence Agency Public Affairs: Testimonies & Speeches." Defense Intelligence Agency. <http://www.dia.mil/public-affairs/testimonies/2010-04-13.html> (accessed March 29, 2011).

¹⁰⁰ Devin T. Hagerty. *The Consequences of Nuclear Proliferation: Lessons from South Asia*. (Cambridge, Mass.: MIT Press, 1998). Analysts of international politics have debated heatedly over the likely consequences of the spread of nuclear weapons. Most argue that nuclear proliferation will destabilize the world and increase the risk of nuclear war. Others counter that the threat of nuclear war is enough to convince new nuclear nations to adopt prudent security policies, especially those like Iran who possess regional and global hegemony ambitions. If Iran were to acquire nuclear weapons, the relatively small number they could produce would likely keep these weapons at home to ensure regime survival, instill fear in its neighbors, and deter US aggression. Furthermore, turning even one weapon over to a terrorist organization with Iran's relatively defensive stance would be very unlikely. This calculation may change if Iran embarks on an aggressive path of vertical proliferation once a nuclear weapons capacity exists.

¹⁰¹ Alagappa, *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, 309.

terrorist attacks. However, the effectiveness of any attribution strategy will be predicated on how unambiguously the US signals to Tehran that nuclear terrorist acts committed with transferred Iranian weapons or fissile material would eventuate in its destruction.

Implications and Transferability to Other Rivals

Simply put, barring a preventive strike to destroy Iran's nuclear capacity, it is exceedingly probable that Iran will become the tenth nuclear weapon state within the next few years. We noted at the beginning of this chapter that rivals tend to be very perceptive to changes in military doctrines and military capabilities; Iran took note of the new US nuclear policy. It is very likely that the aggressive foreign policy imparted by "Lead-but-Hedge" and its predecessors is partially responsible for Iran's steadfast pursuit of nuclear weapons. From this case, it seems clear that the presence of a threatening hegemonic power rivalry poses sufficient intimidation to motivate a weaker state to endure great domestic and international costs to ensure its security. Thus, in a protracted rivalry, especially where one state is particularly vulnerable due to vast asymmetries, nuclear deterrence becomes a very attractive strategy.

In Barry Posen's seminal work, *The Sources of Military Doctrine*, he examines how military doctrine takes shape and how it figures into grand strategy. He posits that the political isolation of a state is dangerous, and notes, "the creation of international pariahs should be avoided...such states are thrown back upon their own military resources, with unpredictable consequences".¹⁰² While formulating policy towards rivals, the US must be cognizant of these consequences or at least be prepared to live with them. In Iran's case, isolation coupled with nuclear

¹⁰² Posen, Barry. *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars*. (Ithaca: Cornell University Press, 1984) 241.

threats and overwhelming US conventional superiority provides a reinforcing, not a moderating effect, on their nuclear logic.¹⁰³

In a world beset by a nuclear Iran, US deterrence goals become infinitely more complex. Not only will a deterrence construct tailored for Iran be necessary, but more robust security assurances will likely be required, to dissuade other regional actors from pursuing a similar course of nuclear weaponization. In such a scenario, mollifying the new security dilemma caused by an Iranian bomb becomes paramount in maintaining the cohesion of any nonproliferation regime. In an attempt to control a potential explosion of horizontal proliferation, the US and other nuclear powers would need to reconsider their current engagement strategies within the region. This might include extending or strengthening positive nuclear assurances to “select” regional states.¹⁰⁴ These assurances would need to be accompanied by both offensive and defensive conventional commitments (i.e. theater missile defense) able to credibly deter and/or defeat Iranian capabilities.

In the absence of such commitments, nations that could “go nuclear” rapidly might seek to internally balance through their pursuit of latent nuclear programs.¹⁰⁵ New nuclear actors as well as varying cost/benefit computations would make the current deterrence paradigm infinitely more convoluted and prone to catastrophic breakdown. A proliferated region could also significantly decrease stability during a crisis. Accidental or catalytic regional nuclear wars could more easily erupt between nuclear brandishing states. Inherent in this prospect is the entangling alliances and assurances threatening to draw in the US

¹⁰³ Soloksky, Richard. "Demystifying the Nuclear Posture Review." *Survival* 44, no. 3 (2002): 136.

¹⁰⁴ Currently, the five declared nuclear powers have harmonized their Positive Security Assurances and are codified in UN Security Council Resolution 984. See the Nuclear Threat Initiative Website at: <http://www.nti.org/db/china/engdocs/unsc984.htm> to review the text of the resolution.

¹⁰⁵ Major Middle Eastern states like Saudi Arabia, Egypt, and Turkey would surely rethink their nuclear chastity given the rise of nuclear Iran.

and other nuclear weapons states. This could quickly devolve into a general nuclear war by use of only one or a few weapons.

Conclusion

The cases contained in this chapter demonstrate that US reliance on nuclear weapons for deterrence is becoming both increasingly hazardous and decreasingly effective as a nonproliferation tool. These important changes in the nuclear security environment demand innovation in US declaratory policy. This chapter exposes how the ambiguities imparted by “Lead-but-Hedge” serve to provide the US with increased freedom of action but does so at the expense of clear articulation of intentions as well as its nonproliferation objectives. Evidence seems to indicate a more explicit declaration in response to crossing pre-defined thresholds may provide a moderating effect on the nuclear behaviors of allies, competitors and rivals. In an era of more salient WMD threats, clearly communicating the risks associated with nuclear use against US interests seems prudent. This type of declaratory policy would induce increased caution and restraint by an adversary, while simultaneously allowing the US to credibly pursue its nonproliferation efforts.

Ultimately, if nonproliferation and counterproliferation efforts fail, the US and its allies must be fully postured for the regional and global implications of newly minted nuclear club members. Each “break-out” will possess a unique nuclear logic that defines its character in terms of both size and posture. The underlying logic and proximate strategic issues driving each nation’s respective nuclear decisions must be decoded to develop an effective engagement strategy that maximizes deterrent value while obstructing further horizontal or vertical proliferation. This begins with a clear understanding of existing and emerging security threats in order to help proactively pacify regional confrontations and conflicts.

Evidence suggests that the emergence of a nuclear-armed neighbor or the perception of inferiority in conventional forces, if not addressed, can lead to the further proliferation of nuclear weapons and an increased risk of their use.¹⁰⁶ Successfully addressing these security dilemmas will require a deft ability to integrate and synchronize the entire suite of US national security instruments. The role of non-nuclear means of deterrence, to effectively prevent conflict and increase stability in troubled regions, must gain a more prominent role. However, critical to any regional engagement is an anticipatory deterrent strategy, tailored to address the nuclear logic of potential rivals, assure affected allies, and dissuade horizontal proliferation caused by new nuclear neighbors. As noted previously, this may require the US to adapt its declaratory policy and extend its security umbrella to “select” nations in order to abate new and powerful security dilemmas.

The US and its allies, working in consonance, must develop changes to extended deterrence over time. Reconciling differing national perspectives on nuclear deterrence is a challenging problem and promises to cause great apprehension while finding a solution. Nevertheless, developing comprehensive offensive and defensive solutions should occupy the primary focus. Augmentation of newly issued security assurances requires major obligations in Ballistic Missile Defense (BMD), consequence management, and other counter-weapons of mass destruction capabilities. By offering states a way to mitigate or impede a nuclear attack without needing to resort to horizontal proliferation, the US can still forward both its deterrence and nonproliferation objectives, even with the addition of new nuclear actors.

¹⁰⁶ Shultz, George P., William J. Perry, and Henry A. Kissinger. “Shultz, Perry, Kissinger, Nunn: Deterrence in the Age of Nuclear Proliferation - WSJ.com.” Business News & Financial News - The Wall Street Journal. <http://online.wsj.com/article/SB10001424052748703300904576178760530169414.html> (accessed March 8, 2011).

Conclusions

Through examining the nuclear decision-making of Japan, India, and Iran it is readily apparent that nuclear weapons have continuing relevance in their respective security calculations. Although informing each nation's calculation are unique circumstances, the essential elements driving their nuclear requirements share striking similarities. Consequently, there is no leap-in-logic when extrapolating these drivers to the nuclear behaviors of other allies, competitors and rivals. These case studies foreshadow a dangerous potential for growth in the number of nations either possessing, or to hedge its position, teetering on the precipice of a nuclear weapons capability. With panoplies of differing national motives, aims, and ambitions for proliferation, this condition poses unpredictable risks and increased global instability. To mitigate these factors, the US must posture its nuclear forces in a way that optimally balances its goals of deterrence and nonproliferation.

Dwelling at the nexus of these twin objectives is the US nuclear declaratory policy, a powerful national security instrument requiring systematic thought in both its formulation and execution. With the NPR de-emphasis on the role of nuclear weapons in strategic thinking, the US expects to produce moderating influences on an increasingly uncertain nuclear security environment. Yet, by narrowing the possible circumstances for nuclear use, the US may simultaneously create inflammatory influences working at cross-purposes with its deterrence and nonproliferation goals. The previous five chapters have attempted to reveal this tension and illuminate a path exposing an alternative strategy, one which may elicit a more desirable US national security outcome.

Harmonizing deterrence and nonproliferation goals provides the impetus for this thesis. Through this work, I expose the benefits and shortfalls of the new “Lead-but-Hedge” policy espoused in the 2010 NPR and evaluate how it balances the aforementioned goals. This thesis argued that declaratory policy is a habitually underutilized and misused national security tool in the fight against proliferation, WMD terrorism, and traditional threats within the current nuclear security environment. The longstanding US policy of calculated ambiguity has typically avoided explicit statements concerning how the US might respond to conventional and WMD threats. This was done primarily to increase the President’s decision space and avoid placing too high a value on the salience of nuclear weapons as an instrument of policy.¹ Historically, calculated ambiguity has attempted to maintain a balance between the requirements of deterrence and nonproliferation objectives in this very limited way. Over the last 65 years, the US became very comfortable with the benefits and risks of calculated ambiguity. However, replication of the high-risk stability formerly existing between the two Cold-War superpowers remains unlikely. Characterized by more nuclear players and diffuse WMD threats, the new nuclear security environment demands adaptation.

To achieve the desired suppleness in its nuclear policy, the US must retain robust nuclear response options, while simultaneously committing to a sole-purpose policy. This thesis proposes that in an era of salient WMD threats, it is necessary to communicate more directly the risks and consequences associated with WMD use against US interests. Accordingly, a sole-purpose policy adopted by the US would best balance the requirements of deterrence, on the one hand, and the Obama administration’s top priority of nonproliferation on the other. Nevertheless, a sole-purpose policy is not without risks. This thesis

¹ Bernstein, Paul I. and John F. Reichart. *The Future Nuclear Landscape*. (Ft. Belvoir: Defense Technical Information Center, 2007) 34.

describes three vexing issues—BW attacks, nuclear weapon state transfers of WMD to transnational terrorists, and allies’ apprehension—which impede adoption of this more explicit policy. However, as discussed in previous chapters, risk mitigation through overwhelming offensive and defensive capabilities possessed by the US, agile consequence management techniques, and high levels of coordination and consultation between allies and partners is possible. Conversely, leaving the ambiguity inherent in “Lead-but-Hedge” as the centerpiece of US declaratory policy carries with it significant risks in this new and dangerous nuclear security environment. As demonstrated throughout this thesis, such a policy harbors much risk in a proliferating world. Its inherent vagueness can cause dangerous misinterpretation of US intentions leading to actions that contradict US preferences, to include, perilous adventurism and incentives for nations to pursue a nuclear weapons capability.

The methodology used to arrive at this reasoning employed a diverse set of historical, theoretical and practical frameworks. The historical framework used in this analysis began by creating a thematic narrative tracing US declaratory policy generation from early nuclear deterrence thought through contemporary thinking. Using this narrative illustrated the enduring principles that govern nuclear policy development. The second historical frame explored five of the most influential nonproliferation efforts: The Baruch Plan, Eisenhower’s Atoms for Peace Program, the NPT, PTCRs, and the counterproliferation regime. Each initiative was analyzed with regard to their original logic and intent while examining their individual worth, shortfalls, and impacts on the current nonproliferation regime. It was through this analysis that we began to tease out the relationships existing between declaratory policy, concepts of nuclear deterrence and nonproliferation efforts.

The theoretical foundation of the thesis employed a comparative analysis to examine if the new declaratory policy contained in the NPR is consistent with our historical interpretation. It began with an analysis of a notional US sole-purpose policy, a policy one might expect to see given the changing nuclear security environment and the conclusions generated from the historical frameworks. The efficacy of the “Lead-but-Hedge” strategy was then analyzed by observing analogues and disconnects found in comparison to our sole-purpose policy. As a final point, consideration was given to if the new declaratory policy genuinely changes the basic global message the US sends regarding the right to use nuclear weapons.

Finally, the previous chapter served as the capstone of this thesis and a practical framework used to examine the strategic consequences of “Lead-but-Hedge” on the nuclear decision-making processes of Japan (Ally), India (Competitor), and Iran (Rival). Each case explored the sequence of events informing these nations’ unique nuclear logic trails and defined the relevant strategic issues driving their nuclear decision making processes. The effects of “Lead-but-Hedge” were examined on their nuclear calculations as well as the policy’s propensity to drive horizontal or vertical proliferation behavior. These impacts were then evaluated for their moderating or damaging influences on US deterrence and nonproliferation objectives with results extrapolated to like allies, competitors and rivals.

Summary of Findings

In his 2010 National Security Strategy, President Barack Obama asserted, “The proliferation of nuclear weapons poses the greatest threat to our national security.”² In order to confront this threat, policy makers must understand the essential logic underpinning the complex

² *The National Security Strategy of the United States of America*. (Washington: White House, 2010) 4.

relationships existing between declaratory policy, nuclear deterrence and nonproliferation norms. In this thesis, we address each in turn with important propositions emerging to guide future deterrence and nonproliferation efforts.

Central to this understanding is the analysis of past and current nonproliferation initiatives. This study explores the Baruch Plan, Eisenhower's Atoms for Peace Program, the Nuclear Nonproliferation Treaty (NPT), Proliferation Technology Control Regimes (PTCR), and counterproliferation efforts. Examination of these benchmark initiatives gives us a better understanding of what the global community is doing to curb proliferation and why. The benefits, shortfalls, and impacts of each initiative reveal that some of their previous strategic assumptions need revisions while others are still valid today. Scrutinizing these nonproliferation initiatives also assists in teasing out the relationships existing between these efforts, US nuclear declaratory policy, and concepts of nuclear deterrence. Through careful investigation of the successes and failures of nonproliferation initiatives, one finds that US nuclear declaratory policies can affect the nuclear aspirations of nations. For example, by means of issuing positive and negative security assurances, the US has effectively mollified various nations' security dilemmas and put off their desires for organic nuclear weapons programs.

Furthermore, it is evident the US acquires credibility with non-nuclear weapons states within the nonproliferation regime when it pursue negotiations in "good faith" on nuclear disarmament. This effect is multiplied when in concert with reductions in the salience of nuclear weapons as a policy instrument. However, as the US continues to draw down its strategic forces in accordance with the new START Treaty, careful consideration must be given to the credibility and posture of its own deterrent. The ability to provide extended deterrence and other security assurances which impede proliferation are predicated upon a

safe, secure and reliable force—one in the midst of extreme age and downsizing. Understanding these linkages aids in the formation of future policies that are in consonance and better positioned to meet the needs of US grand strategy.

This thesis also exposes that much of the imprecision and ambiguity intrinsic to previous US declaratory policies are also present in “Lead but Hedge”. Although the NPR takes positive steps towards US nonproliferation goals, by reducing the role of nuclear weapons in strategic thinking, its inherent vagaries possess great risks in a proliferating world. In an era of more diffuse WMD threats, WMD-armed adversaries may perceive the absence of explicit nuclear threats as a sign that it may escape severe retaliation in response to egregious attacks. The NPR employs language intimating that nuclear weapons *might* be used in “extreme circumstances” to protect “vital interests” while in the same breath positing that the US “reserves the right to make any adjustment in theses assurances”. However, this type of middle-of-the-road approach can have hidden consequences working in dissonance with US stated objectives.

To signal its intentions under this construct, the US would need to clarify the ambiguity imparted by “Lead-but-Hedge” in the midst of crisis (such as was done in the first Gulf War). This thesis proposes that declaring nuclear intentions in this way can have unwanted ramifications on crisis stability and be seen as highly threatening and escalatory during a conflict. Additionally, there may be other costs involved with altering or revoking nuclear assurances, specifically with regard to US nonproliferation efforts. In the current nuclear security environment, it is imperative nuclear declarations be both consistent and believable. If capriciously applied or routinely altered, non-nuclear weapons states may begin to believe that eschewing nuclear weapons runs contrary to their own long-term national security interests. Thus, to avoid coercion by a fickle nuclear state and ensure its security, non-

nuclear states may determine that they require possession of countervailing nuclear capabilities. The explicit threat imparted by a sole-purpose policy would negate these perceptions. It would also lessen an adversary's perception of ambiguity by making sharper threats of nuclear retaliation in response to meeting certain pre-defined and well-articulated thresholds.

The three cases presented in the previous chapter provide a good laboratory for testing the influence of "Lead-but-Hedge" on a state's nuclear logic and buttress claims for a sole-purpose policy. By observing Japanese, Indian, and Iranian reactions to the new US nuclear doctrine, we are able to tease out policy implications possessing relevancy to other US allies, competitors, and rivals. These implications promise to become exceedingly important as US nuclear policy continues to evolve to meet the opportunities and threats inherent in the changing nuclear security environment.

Allies' potential reaction to declaratory policy plays a major role in its practicality and goes far in reaching US nonproliferation aims. For nations like Japan that depend on the US for both nuclear and conventional deterrence, the release of the NPR could have been fraught with great apprehension. However, the Japanese government has responded positively to the new declaratory policy, in large part due to unprecedented levels of coordination and consultation between Japan and the US during the drafting process. This extensive consultation on nuclear strategy and policy should expand not only to include formal allies, but informal ones as well. These deepened consultations on policies and combined postures should go far in helping to prevent proliferation and in credibly deterring aggression while adopting a sole-purpose policy. With a better understanding of the US conception of extended deterrence and nonproliferation goals, allies and partners are in a solid position to support these shared goals.

Yet, consulting allies on declaratory policy only goes so far. Legitimate regional security dilemmas continue to linger and require credible assurances. The NPR places the threat posed by nuclear weapons in the hands of non-state actors at the top of its priority list. However, many allies' derive their greatest security concerns from traditional nuclear powers. It remains clear that during the US drawdown trajectory, quantitative and qualitative parity must be maintained to provide a credible deterrent to assuage these concerns. Additionally, before implementing a sole-purpose policy, it is imperative US extended deterrence guarantees are not undermined by some of the vexing issues mentioned previously. Threats from CBW and nuclear terrorism continue to leave the US and its allies vulnerable to catastrophic attacks. In the absence of adequate conventional offenses, defenses, and consequence management techniques, concerns regarding shifting US nuclear policy can be expected to increase.

Additionally, US competitors seem unmoved by the new US declaratory policy. Although the new statement lowers the priority given to nuclear weapons in US strategic thinking, ultimately, "Lead-but-Hedge" fails to specify the circumstances under which the US might use nuclear weapons. By stipulating that nuclear weapons could be used in "extreme circumstances" to protect "vital interests", it has retained much of the vagueness that was the hallmark of calculated ambiguity. Thus, many competitors see "Lead-but-Hedge" as a status-quo posture unworthy of stimulating a rethinking of their own policies.

Ultimately, competitors' base their formulations of nuclear logic on their assessments of current security threats. This truism is evident in the case of India, geographically squeezed between its two rivals—China and Pakistan. As China, India's main strategic threat, continues to rise and modernizes both its nuclear and conventional forces, India will seek to balance internally through vertical proliferation. This trend promises to be exacerbated by the Pakistani threat to the west. Pakistani nuclear

capabilities, as well as the growing strategic partnerships with both China and the US, provide India with powerful incentives to continue to modernize its arsenal. These reactions should teach policy makers a powerful lesson: until “Lead-but-Hedge” or other efforts can modify the nuclear security environment, possibly through alteration of regional strategic balances, US nonproliferation goals will be difficult to obtain and deterrence in these regions will remain delicate.

At its core, declaratory policy is a tool used to communicate with its rivals. It signals US perceptions of the gravity of specific acts by announcing those options the US might exercise. The declaratory policy found in the NPR and development of National Missile Defense Systems seemingly have all been designed to combat rivals like Iran, North Korea, and other potentially defiant states. Under the new NPR guidelines, Iran is classified as a clear US nuclear target. In it, “Lead-but-Hedge” gives deference to the desired deterrent effects it wishes to create, but does so at the expense of its nonproliferation goals, making the policy ill-suited to faithfully achieve its intended aims. Ironically, the declaratory language in the NPR has had a reinforcing effect on Iran’s nuclear trajectory, with the administration’s tough stance seemingly bolstering Iran’s commitment to nuclear weapons acquisition. Conversely, adoption of a sole-purpose policy would have a moderating influence on Iran’s nuclear aspirations while simultaneously allowing the US to credibly pursue its nonproliferation efforts.

The lessons from the Iran case study are ominous. If nonproliferation and counterproliferation fail in their efforts, the creation of a deterrence strategy tailored for Iran as well as other defiant nuclear aspirants becomes imperative. In Iran’s case, a new nuclear power in the Middle East has the potential to be the greatest threat to non-proliferation yet faced. To mitigate possible proliferation concerns, the US must be prepared to assure regional allies and partners using positive security assurances as well as credible offenses and defenses to

mitigate Iranian nuclear capability. It must also be prepared to use the entire suite of national security instruments integrated and synchronized with a coherent and consistent Iranian engagement strategy.

Further Research and Shortcomings

Paucity of empirical data regarding just how proliferators and potential nuclear weapons states make decisions presents an area ripe for research. Casually mentioned in the previous chapter was that nations are generally very opaque regarding political intentions driving their nuclear aspirations. This condition makes the gathering, collation and analysis of relevant data extremely difficult. Moreover, what little is obtainable is primed for misinterpretation due to a lack of understanding of the complex exogenous and endogenous factors at play in these decisions. Nonetheless, this data exists and waits culling by country and cultural experts possessing access to internal government documents not accessible to this author. Until this type of data is available, it is unlikely we can be sure as to what degree US declaratory policy actually affects the variables studied in this thesis.

Additionally, more research can be done to understand the applicability of the historical, theoretical and practical frameworks presented in this thesis. Teasing out the relationships between declaratory policy, deterrence and nonproliferation in a detailed manner is made easier using the three short case studies in Chapter 5. However, this small sample size and lack of case depth opens the study to potential errors and biases. To help dampen these potential errors and expose a more robust relationship, this thesis should be tested against other cases. The effects and strategic consequences of “Lead-but-Hedge” should be analyzed for its influences on the nuclear logic of other allies, competitors, and rivals. Candidates might include allied nations like South Korea or any number of Eastern European NATO nations suffering from persistent security dilemmas. Other competitors worthy of

examination might include rising nations such as Brazil, Russia or China. Finally, North Korea and Iraq, during the Saddam Hussein era, are two cases that can be used to test this thesis upon the behavior of rivals.

A Purposeful Step Towards a Prudent Declaratory Policy

Nuclear use in this century is neither determined nor precluded. However, in today's proliferating world, it is foolhardy to expect the functioning of deterrence will be as predictable, easily understood, achieved and manipulated as it was between the Cold-War superpowers.³ Yet, by holding on to the ambiguous nuclear policies that governed deterrence between the two Cold-War monoliths, the US nearly guarantees that the next failure in deterrence will come as a surprise and result from misinterpreted intentions. It is time to leave behind the brilliant, yet outmoded nuclear frameworks of the Cold War. The US, and others who favor nuclear moderation, can make important policy choices that could maximize deterrence value, limit the spread of nuclear weapons, and ultimately, the probability of war. First among these choices is the proper aligning of US strategic priorities—specifically those of deterrence and nonproliferation— and best accomplished through adoption of a sole-purpose nuclear policy. Only through the moderating effects produced by such a policy, will the US be able to balance these requirements with the reality of multiple and diverse opponents, WMD proliferation, and dynamic threat conditions inherent in the changing nuclear landscape.

³ Keith B. Payne. *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century*. (Jessup, MD: National Institute Press, 2008), 441.

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